Vol 6 No 10

October $3.50*

The Australian COMMODORE and AMIGA REVIEW

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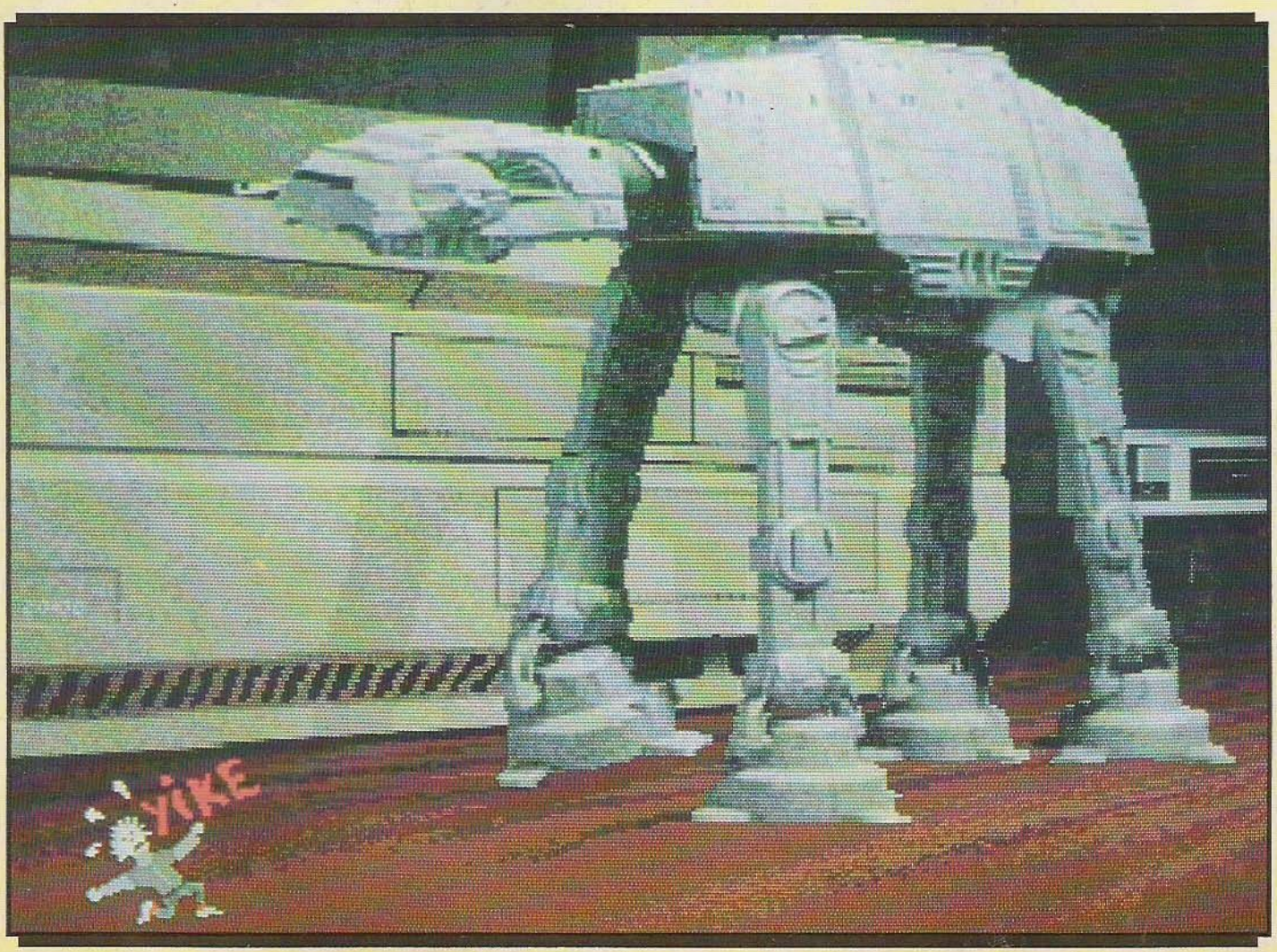

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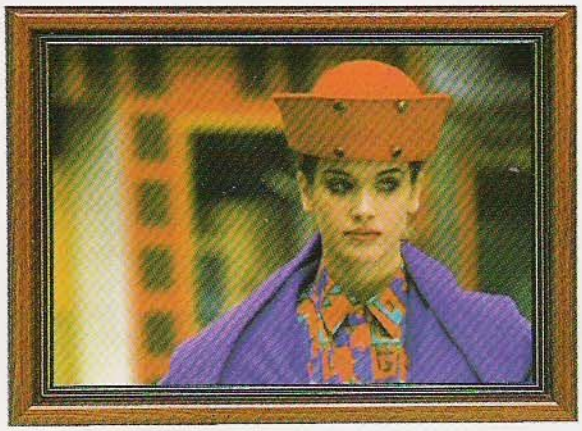

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The Australian COMMODORE and Amiga Review

VOL. 6 NO. 10 October 1989

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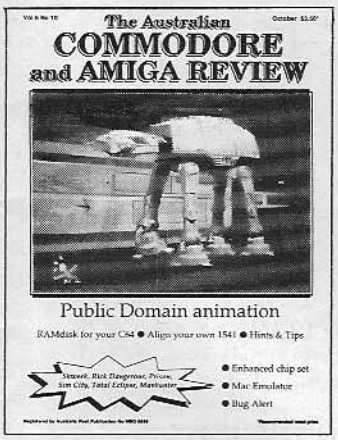

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Editorial

In this month's issue we have a review of the enhanced chip set for the Amiga range of machines. The upgrade is certainly an exciting step for the Amiga community. It must be the first time a Commodore computer or any home computer for that matter, has been so dramatically upgraded via replacement chips without disturbing software compatibility.

In the rumour mill this month, the American INFO magazine reports that development is under way in the United States by Commodore for a new 8 bit machine that is compatible with the Commodore 64. The specifications sound fantastic. It will be interesting to see how Commodore handles the release of technology in the 8 bit arena.

Some good news on the horizon from the Commodore camp - it looks like we may see a new computer training arrangement to be operated by approved independent businesses. A great idea that deserves plenty of promotion. Amiga owners need somewhere to go where they can learn to use their machines professionally. After all, the Amiga is potentially a strong alternative to an IBM AT.

Andrew Farrell

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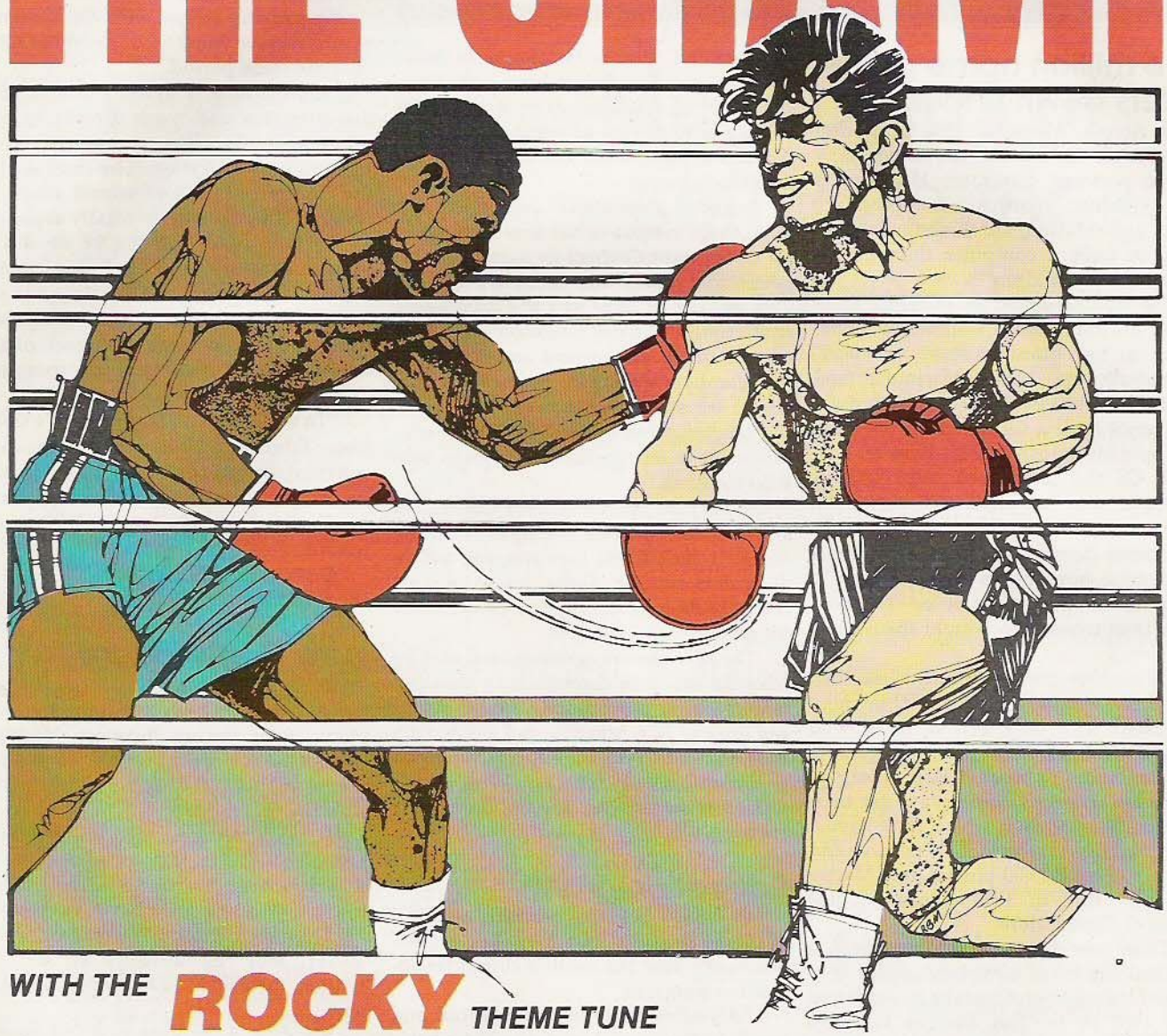

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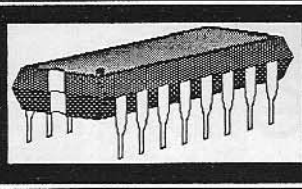
Ram Rumbles



One million home computers down under

● Across Australia 16% of households, or almost one million homes, now have a personal computer. Households with children, particularly secondary school age children, are three times more likely to have a computer than households without children.

The leading brand in personal computers for the home is Commodore with more than four times the share of its nearest competition Apple Macintosh and Amstrad. 42% of personal computer owning homes have a Commodore, 9% have an Apple Macintosh and 8% have an Amstrad. Of the dozens of other brands available, none has a share of more than 5%.

Despite decreasing prices for personal computers, households which bought a computer in the last year or two paid more than those who bought them earlier.

Of households who bought less than 12 months ago, 46% paid $2,000 or more compared with only 24% of those who bought them 12 months ago or longer.

Commodore's market lead is largely in the lower priced home computer market (less than $1,000) where they have a clear majority. At the more expensive end of the market ($2,000 plus) Apple Macintosh and IBM or IBM clones are just ahead of Commodore.

These are the main findings from a national survey of 4,754 households conducted throughout Australia in April and May 1989 by the Roy Morgan Research Centre. Off the statistics side of things and on to gut feelings - we reckon if Commodore were to launch a A2000 without IBM slots and with an optional 68020 board at a good price, more Mac owners would be buying Amiga.

Commodore-Microbee agreement

● *A joint venture between Commodore Business Machines and Microbee will see the famous Australian computer name take on a new direction. Microbee, the Australian computer manufacturer which was purchased by Giuseppe and Serafino De Simone in 1988, was very popular amongst home enthusiasts and, later, in education. Even more importantly a large amount of software for education was written for the 'bee, as it became affectionately known.*

Recently, Commodore announced that their Amiga computers had been accepted on the Government Contract for supply of computers to Primary and Secondary schools. This was due in large part to Commodore's establishing a National Education Channel to concentrate on development and support of the education community in Australia, but also to the education authorities' realisation that the Amiga was the logical choice for education due to its significant advantages over other machines.

In the joint venture between Commodore and Microbee, Microbee educational software, including the popular Lego program, will be adapted to suit the Amiga, taking into account the Amiga's superb graphics and sound features.

The joint venture agreement will also see Microbee education centres selling the Commodore range, concentrating on the Amiga and low end PCs. Microbee staff will be fully trained on the Commodore Amiga, with both Commodore and Microbee contacting schools to explain the joint venture and their future plans.

Education grant

● **NSW schools recently received grants as the first instalment in the Government's new $53 million computer education program.**

"All secondary, primary, central and special schools will receive a large basic grant and school communities will determine the spending priority for their school. This first instalment covers payment for 1988 and 1989.

"In addition, schools will also have the option of appointing a computer education co-ordinator for a set time per week, or receiving a supplementary cash grant for the salary equivalent.

"It is the Government's view and that of Dr Scott, that parents and teachers are in the best position to determine the current priorities for their school in computer education, " Dr Metherell said.

"Under the program, a secondary school with 800 students will receive over $23,000 by the end of next year; somewhat less if a part-time computer co-ordinator is appointed.

"A primary school with 450 students would receive funding of nearly $12,500 over the same period.

"All of the $53 million funding for this program will work directly to improve students, classroom participation in computer education. The funding for the computerisation of school administration (OASIS) will be totally separate. To further assist schools in obtaining maximum value from the funds provided, the Department of Education has negotiated a substantial discount under a bulk purchase scheme with each of the seven contract suppliers of computer equipment to schools.

"In addition, the Department's Computer Education Unit and regional computer education consultants will continue to provide advice to schools and professional development courses for teachers."

Let's hope Commodore is high on the recommended list!

New Commodore AT

● In a move certain to cause shock waves amongst personal computer suppliers, Commodore Business Machines have announced a new 'AT' compatible model with a price tag more in keeping with the 'XT' models.

It has a recommended retail price of just $2699 - and this includes a paper white monitor and auto EGA graphics card.

The new model, the Commodore PC 30-111, will run virtually all software written for the MS-DOS operating system.

The 30-111 features an 80286 processor running at 6, 9 or 12MHz, and includes both a 20 megabyte hard disk and a 1.3MB (3-1/2in) floppy disk drive.

Also included is built-in mouse support along with Commodore's unique "Autoconfig" feature, which automatically configures the on-board peripherals to prevent address and memory conflicts without the inconveniences of having to reset DIP switches.

The PC 30-111 also includes MS-DOS 3.3, and is fully supported by Commodore Business Machines' nation-wide service network. ❑

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Recover II - for recovering deleted files, ***And More...***
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Games: Bert the Bug, Hangman. **Demos:** Amiga Pharoah, Space Harrier, Max Headroom, The Pacer, Sade. **Home Inventory Graphics:** Light Fantastic. **Utilities:** 1571 Utility , DIR@828, Disk Filer ***And More...***

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Electronic CAD Package - Design electronic circuits. Software Cataloguer - keep track of programs, sorts and prints. Character Thief - Extract redefined character sets from games. Pointer C64 - give your C64 an Amiga pointer. Best single disk file copier - for moving files around your disk, allows wild card format. Never ending scroll - edit and design your own message scrolling across screen. SEQ file reader - view sequential files such as EasyScript. CompuPage - game.

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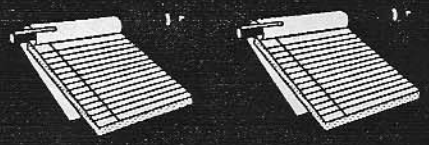
C64ers



New Wordprocessors!

● A rewrite of Timeworks' *World Writer* wordprocessor should be available soon. The new version will compete with *GEOwrite*, offering support for *GEOS* fonts as well as providing its own collection. A C128 version of *The Write Stuff* and an improved C64 version are out - the South Australian Commodore User Group kindly sent us review copies. Watch for a write up next month.

Bible Research

● SOGWAP, best known for the *Big Blue Reader*, has released *Bible Search*.

The program operates in both 64 and 128 modes and contains the complete King James Version New Testament compressed onto one floppy disk. A concordance is on a second disk. It boasts very fast search routines and printer support. Order direct from SOGWAP, 115 Bellmont Rd., Decatur, IN 46733. 219-724-3900. Or try Briwall (062) 880 131 locally.

GEOS upgrades

● Upgrades from any previous version of GEOS to the current version 2.0 are now available from Computermate. The C64 upgrade is $60 and the C128 is $59. For further information contact Computermate direct (02) 457 8118. Isn't it great to see this sort of support in Australia, we hope more software companies follow suit. ❑

TurboMenu Cartridge

THERE ARE still quite a number of C-64 users with stock standard equipment "out there" and, admirable as the Commodore DOS is, they all-complain at one time or another about its speed. Loading and saving of programs to disk seems to take forever, it seems. This handy cartridge helps overcome those problems, and offers quite a few other features too.

First of all it takes the loading speed up to around 5 times the normal speed using a 1541 or 1571 drive. I tried it with both and verified the speeds OK. Saving programs was quicker too. It also helps to speed you up by providing a set of simplified commands using the "" sign as a prefix. For instance "$" puts a disk directory on screen (much quicker than typing Load "$", 8) and it's a "non-destructive" directory which doesn't overwrite the program in memory as does the original Commodore command. Type D"Filename" to delete a program, which is much quicker than typing

Open 1,8,15,"S0:Filename":Close 1

isn't it?

There's more, "L" loads the first program on a disk, "F" formats a disk, "B" will give a printed listing of a Basic program in memory. The manual lists several other shorthand commands too.

The cartridge takes its name from its ability to make a menu on disk of all its programs. This makes it easy to load and run your programs without having to type their names. With the disk in the drive just pressing Commodore & Run/Stop puts the menu on screen to allow program selection by scrolling up and down the list with the cursor keys. Pressing Return loads the selected program.

Full instructions on how to make a TurboMenu disk are in the small but adequate manual and the menu can have as many programs as you can fit in a disk directory, that is, a maximum of 144. The same Commodore & Run/Stop combination will load and run a commercial program, and is the same as typing Load "*",8,1.

Obvious comparisons will be made with the ever-popular Cockroach TurboRom (which I've been using in my 64 for about three years) and which does have some features the TurboMenu cartridge doesn't. To be fair though, the TurboRom doesn't have the special menu feature either so I suppose customers will need to weigh the pros and cons of both units.

TurboMenu Cartridge RRP $44.95

From Hardware Peripheral Distributors (08) 252-3300.

Eric Holroyd

Update

I'd like to talk to you this month about a problem that affects all of you - the public; and all of us - software suppliers. It is of course PIRACY!

There are three kinds of piracy - one of them is frequently called grey marketing or parallel importing (Piracy "3"). Piracy "1" is when an unscrupulous person gets hold of various programmes that are being imported by reputable companies, and illegally makes copies of them; sometimes several to a disk, and then sells them at some ridiculously low price. Piracy "2" is when a member of the public gets hold of a programme from one of their friends and simply duplicates it, thereby avoiding having to pay for it - this is of course also illegal.

So what!!! I hear you say, it just means that some of us will get cheaper or even free programmes. Unfortunately, at the end of the day we all suffer, because like shop lifting, the end result is that the fair dinkum consumer finishes up paying more for the product than should be the case.

You see, what many people don't realise is the cost of importing a wide range of programmes - so that you have as good a choice as anywhere in the world: the cost of having plenty of stock so that you can get the products whenever you decide to: the cost of advertising these products so that you, the public, know about the release of new programmes; these costs are of course not borne by these irresponsible "get rich quick" operators, or of course by the illegal copiers. If you support these people then we lose money on the product and have to charge more in order to cover these losses, or cut down on the range that we can offer you.

I will talk to you more about this next month, and I know it may not be as interesting as my regular updates; but next month, I also hope to give you some very exciting news about the fight against the above forms of piracy.

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P.S. For updates on our new products, see page 17.

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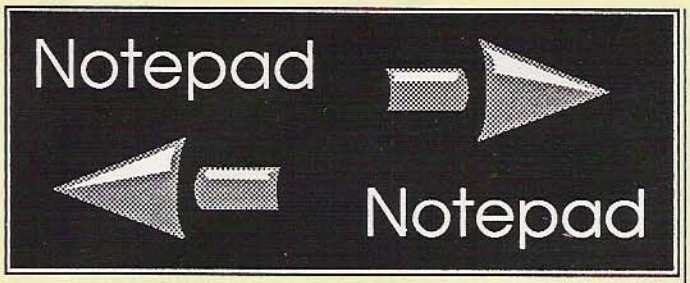

Virus count climbs

● We now have documented 40 viral strains and trojan horse type programs. The whole swag of the critters is put out of action by our latest Anti-Virus Pack version 10. Call (02) 817 0011. There's a few new versions of older detectors and removers, plus descriptions of each virus on the disk which sells for $14.95.

Get organised with Nag and FreD

● *Gramma Software have come great names for their programs. Nag is one package that any budding editor should not be without. To the sound of an elephant blast or any other digitised sound, you can be reminded of important lunch engagements, deadlines, press conferences with free beer and biscuits or a user group meeting.*

The latest offering from Granny is FreD, a new automatic phone dialer/telephone book. It costs $49.95 (US), and according to the press release will keep track "of up to a million of your closest friends". Space is allowed for name, number, and comments along with direct access to the Amiga Notepad. It works with or without a modem (just hold your phone mouthpiece up to the speaker and let FreD dial - if you have tone dialling). AREXX capability is also built in. 17730 15th Ave, NE, Suite 223, Seattle, WA 98155. 206-363-6417. We have a demonstration disk of Nag, FreD and a couple of other Gramma goodies for $5 - (02) 817 0011.

Bigger, faster, better - the Motorola 68040!

● **Motorola has unveiled its new 68040 microprocessor. It's the latest in the 68000 family and incorporates over 1.2 million transistors in the five on-board units; an integer unit, a floating point unit (a built-in 80-bit math co-processor), a memory management unit, and separate data and instruction caches.**

Best news is the 68040 is 100% compatible with existing 68000 family software. The initial release will be a 25 MHz model, with a 33MHz version planned. Hewlett-Packard has already announced it will build workstations incorporating the new chip. Wow! More power is on the way...

Cheaper dimensions

● *Sculpt-Animate 4D Jr*, is a consumer grade rendition of Byte by Byte's popular 3D rendering/animation package. It's a completely re-written version, designed as an introduction to 3D and rendering, and tailored for use on low-memory machines. Missing from this version are Photo mode, spline curves, and paths. If you're looking to get into the 3D world, this title will give you a good beginning, and the files are compatable with *Sculpt Animate 4D Senior*, (full review next month!) so you can easily upgrade later on if you find the world of 3D rendering compelling.

Local RRP pricing is around $230. Available from Computermate (02) 457 81180s

Scanner for DTP coming soon

● *For serious desktop publishing a good scanner is a must. Professional Page is equipped to handle the files heading our way, with new technology such as this little beast from Sunrise Industries IMG Scan. It's a small device that hooks onto your dot-matrix printer and lets you scan anything you can roll around the platen. The printer must support adjustable vertical spacing and have a printhead that moves across the carriage.*

The scanner works at resolutions of 75, 150, 215, 300, and 360 DPI, depending on the printer, and scans in 256 grey levels. There are separate versions for the A1000 and A500/2000. It is not available in Australia yet, but we think Pactronics, (02) 407 0261, has a similar product in the pipeline.

3D objects

● **Gold Disk, soon to be represented by a new distributor in Australia, is shipping their 3D object editor, *Design 3D*, in the United States. It works on the familiar multiple-window system, with each of four windows showing a different view of the object you're working on. There are a multitude of tools, such as rotation, spin, automatic connection of polygons, and built-in 3D text and font editor. $99.95 (US) - and the news is it will be around the same price here.**

Amiga networking made easier

● Vendors have introduced new single-chip AppleTalk and EtherNet controller chips that should make network interface boards simple to design and inexpensive to buy. The EtherNet chip is from NCR, the AppleTalk chip is from the Tops division of Sun Microsystems. All we need now is Workbench 1.4 (there is networking in there, guys?) and a real database package!

Dealer training

● *Amazing as it may sound, Commodore are actually training some of the people you deal with at computer stores. They will be able to answer intelligent questions about the machines they sell. Furthermore, they'll be ready to explain graphics design, desktop publishing, and desktop video applications at the drop of a floppy disk. Hope it didn't cost Commodore too much! Maybe if they could just convince the likes of Grace Bros. to handle our magazine, their staff could stay up to date at their leisure.*

More Abacus books and other odds and ends

● **Along with all the books Abacus has been publishing lately, they've also managed to put out a collection of Amiga utilities. *AmigaDOS Toolbox* has several things of note: Diskmon is one of the better disk monitors we've seen, with direct editing of sectors supported. BTSnap will grab any section of an IFF screen and save it to disk, while Speeder is a speed-up utility that isn't a cache system. Deep-Copy is a fast copier which will handle many different formats, and just for good measure, eleven new Amiga fonts are included. We reckon there are better alternatives - but the Abacus all in one presentation is kind of nice.**

***More Tricks and Tips* is out as is *Advanced C* and *Advanced Graphics. Tricks and Tips* contains 218 pages of odd bits of information such as messages hidden in the operating system. The main sections of the book, though, are about AmigaBASIC and machine code, with program listings included. Available from Pactronics (02) 407 0261.**

Transcript - Word Perfect alternative

● All the indicators look good for the new Gold Disk word cruncher, *Transcript*, expected real soon now in Australia. *Info* magazine appear to

be sold on it as the replacement for *Word Perfect*. The program was designed by Chris Zamara and Nick Sullivan - names you might have seen in overseas magazine *Amiga Transactor*. I have always thought the best guys to write a wordprocessor would be writers. Chris and Nick are just that. So they ought to know what writers want a wordprocessor to be.

A wordprocessor should be reliable, fast, easy, and intuitive. Early reports say *Transcript* succeeds on all counts. *Transcript* is small, fast and the editing controls are thoughtfully arranged. (I get real sick of *Word Perfect's* lack of easy cut facilities and *bbb* separate modes are a definate no.)!s

In some respects it's a low level editor especially useful for desktop publishing. So it was a logical acquisition for Gold Disk specifically who plan to tie it into a future version of *Professional Page*. There are already menu commands in *Transcript* for converting *Professional Page* codes.

Two versions are included on the disk, *Transcript* and *Transedit*, the difference being that *Transcript* has print capability while *Transedit* doesn't. You can directly control attributes on-screen, but formatting and mail merging are accomplished by 'dot' commands.

There's a preview mode that lets you scroll smoothly around a page. *Gold Disk's* spellchecker, *Gold Spell*, has been revamped and included as *Transpell*. *Transcript* should be in stores late this year. Expected retail price is $99.00.

DECworking

● *Syndesis is bringing the Amiga into the arena of mainframes and XWindows. Working through Dale Luck's X11 Amiga XWindow implementation, TSSnet ($250.00 U.S.) provides access to DECnet networks. The initial release will provide asynchronous DECnet communications via what they call a Network Control Program. A programming interface on the Amiga device level is also provided, along with Network Virtual Terminal support. Wake up and smell the microchips, folks; this is where the future lies. No price has been announced yet. Speaking of Syndesis, they have also released two new Interchange modules, one for Turbo Silver 3.0 and the other for Professional Draw. 20 West St, Wilmington, MA 01887. 508-657-5585.*

New versions

● **Access Software is releasing upgrades to their Course Disks for *World Tour Golf*. The main reason for the upgrade is that the graphics have been improved. The first disk should be out by the time you read this, with the second and third following at two-month intervals.**

We spoke to the local distributor to discover that Blue Ribbon Bakery has added AREXX support to their *Who!What!When!Where!* desktop organiser. Owners can update to version 1.1 by sending their original program disk and $3.00 (U.S.) to 1248 Clairmont Rd., Suite 3D, Atlanta GA 30030. 404-377-1514

Soft Logik's *Page Stream* is now at version 1.6. Users report that this version is more powerful and less buggy than the previous version 1.5. Hopefully Soft Logik will send us a copy to review pretty soon.

Notepad

Local public domain programs

● Local software developers are creating some excellent programs, many of them placed in the Public Domain (meaning quite free) or released as Shareware (meaning you're obliged to send them a pittance to help their efforts). Among the better recent offers are:

● **Most** - A unique text displayer, which displays both compressed and uncompressed text, as well as compressed graphics - it automatically recognises PAL or NTSC systems, and has a very neat interface with many user-friendly features, such as colour changes, help screen, iconising,and many more. Written by Richard Wynn entirely in Assembler, it's an example of good tight code.

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● **The Pop Series** - Written by a gentleman called Jon Potter, this series so far includes Popinfo and Popdir. PopInfo allows you to get full information about the computer (free memory, disk space, etc) from an icon, and when unused it sits unobtrusively in a corner, to be awakened at any time.

It also checks for any viruses. Likewise PopDir will give complete listings of any directory from an icon at any time, and also check for the IRQ virus. Jon Potter has also written a Shareware Imageeditor, which will allow full editing of images, which can then be incorporated as code into your own programs.

● **Workbench Displays And Tools** - John Rowe has produced a number of fascinating "hacks" and displays which do strange things to your Workbench, and has now gone further in the utility line.

● **Tamepointer** is a small utility which will force the mouse along either the horizontal or vertical axis, excellent for detailed work in a paint or draw program or even for precision on the Workbench.

● **Bigbench**, which doubles the size of the Workbench screen vertically, thus allowing you to drag windows and icons down out of sight, and you can scroll the screen to access them at any time.

● **Novirus** - This is the ultimate virus killer, beating out anything which comes from overseas. Apart from a search and destroy feature for viruses of all kinds, it has numerous other utilities on one screen, such as the saving and restoring of boot blocks, turning on and off fast ram from bootblocks, and much more. Nic has also released a commercial version of the program with more bells and whistles, which will be regularly updated by using "Brain Files".

If you're interested in any of these, and many others as well, contact the author on (02) 9593692. You can also obtain them on the most recent issue of *Megadisc*, the Australian disk-magazine.

Calligrapher PAL version

● *Yes, they're learning about Pal over there - the new version autoconfigures for PAL or NTSC (as most better programs do these days) is now available along with "FontMover" which helps manage fonts. Available to registered owners of V. 1.0 for US$29.95 from Interactive Softworks, 2521 South Vista Way Suite 254, Carlsbad, CA 92008. Tel: (619) 4345327.*

Ultra DOS utilities

● **Now compatible with Workbench 1.3, new features have been added, and registered owners can get it by mailing in the original disk plus US$10 to: Free Spirit Software, Inc., P O Box 128, 58 Noble St, Kutztown, PA 19530. Tel: (215) 6835609.**

A-Talk III V. 1.0c

● Various bugs have been fixed in V. 1.0, and various protocols added. Registered owners of *A-Talk Plus* can upgrade for US$25, owners of *MaxiComm* for US$50, and if you own *Diga!* or *Online*, you can trade them in for US$60 - send in the original manual and disk. From Oxxi, Inc., Box 90309, Long Beach, CA 90809-0309. Tel: (213) 4271227.

Microfiche Filer Plus

● *Current Microfiche owners can upgrade to this expanded package which seems to do it all - Arexx interface, HAM images, and the rest. Upgrade costs US$69, and full price is US$179. Send to : P O BOx 3319, Framingham, MA 01701. Tel: (617) 8771266.*

Gurus

● **Word has it that the 1.4 release of the Operating system will have big changes, not least of which will be the final abandonment of the big flashing red "GURU MEDITATION NO.....". I suppose if you're a "suit" and using the Amiga for straight business, it must be something of a shock. Legitimacy and widespread sales have their down sides, I guess, and I'll miss the shock-horror, and the vague suggestion that there is some kind of wise man in there who knows what's going on.** ❑

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News from the USA

by Peter Ward

Desk-Top Video

● Desk-Top Video applications and hardware again formed the mainstream of new Amiga products to be marketed in the USA in August. I spoke to Tom Hardison, promotions director of INOVAtronics which was about to release *CanDo*, described as being an interactive audio-visual authoring software package. INOVAtronics are better known for their C.A.P.E68k Assembler package and PowerWindows source code generation system.

I found the initial advertising for *CanDo* in various U.S. publications somewhat cryptic, in describing just exactly what the program did. On subsequent investigation I discovered that *CanDo* gives people with little programming experience, the ability to create Desktop Video/ Multimedia presentations using graphics, animation and sound packages from nearly all major manufacturers, and go one step further by providing menu, window or gadget interaction with the presentation and to provide control of any other software running concurrently which also supports Arexx. The most obvious application using this package would be creation of a Cinemaware type game with commensurate ease.

However, when one considers the possibilities of this package with training applications in mind, the future of the Amiga as a multi-media educational machine is very much enhanced. For example, budding young aviators could be presented with an animated flow diagram of an aircraft lubrication system, asked to respond via gadget selection, as to where an oil pressure trans-

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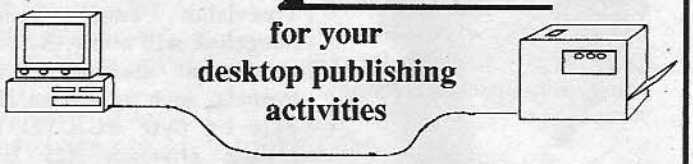

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mitter is located, and then using either the Amiga's voice or sampled speech, told whether the answer is correct or not.

The session can be further enhanced, as *CanDo* allows control of external hardware devices such as LaserDisc players or VCRs, so that a short video on the location of various engine components could be linked to the session schematics at the appropriate time. INOVAtronics will be shipping PAL versions of *CanDo* about one or two months after the NTSC release. Recommended price will be US$149.95.

Electronic Arts have released version three of their *Deluxe Video* program. *Deluxe Video III* supports Arexx and hence control of external hardware such as Genlocks, VCRs and MIDI equipment is possible. Integration of animation and sound is done using an improved intuitive "graphics interface". RRP is US$149.95, though a less expensive upgrade path is available for existing users through Electronic Arts.

Transputers

● *While I was not able to attend the August Chicago Expo, I did manage to quiz Creative Computers service manager, Kelly Keith, who was present at the show. Some amazing video hardware for the Amiga 2000/2500 was on display. Digital Animation Productions based in Boston, had their Video Graphics Transputer and SANG Transputer boards on display. The computing power of these boards is definitely in the stratosphere.*

To quote from the promotional material: For CAD purposes a 4096 x 4096 display can be processed in memory via a scrolling 1280 x 1042 window of 16 colours. Linking 3 transputers with 20 megabytes of VideoRam allows resolution of 8192 x 8192 in 16.7 million colours simultaneously! The system can digitize images with 16.7 million colours and resolutions of 800x600, further the image can then be manipulated such as texture maps on wire frames and with clock speeds of up to a blistering 110 Mhz, dedicated workstation art, real-time video or scientific applications are well within reach.

Commodore had announced several new items. The A2360, a 256 colour on the screen (from 16 million), hi-res graphics card. The A2630, effectively the Amiga 3000 card, a 68030 based board running at 25Mhz, and lastly the A590 an all in one SCSI controller, 20 Megabyte hard disk, with sockets for an additional 2 Megabytes of RAM for Amiga 500 owners.

Graphic boards

● **Circuits Inc, based in New Jersey also introduced *Imagelink*, an image conversion program which can be used in conjunction with an IBM XT/AT bridgeboard and Truevision Targa board. *Imagelink* will allow the conversion of multiple image formats, such as Amiga IFF, Byte by Byte RGB (24 bit plane), *Digiview* (21 bit), Macintosh PICT (24 bit), *Turbo-Silver* (24 bit) and *Targa* (24 bit), for use with the Targa board. The program uses the Amiga intuition interface and also has ARexx support.**

The Targa board gives programs like *Sculpt 4D* the ability to render images in 16.7 million colours, as well as provide the ability to genlock and capture full colour NTSC video frames in real time. Similarly equipped IBM systems capable of 3D rendering can cost up to US$15,000 for software alone! The TARGA 32 board with Imagelink and Targa Direct program module will cost US$4950, plus an additional US$1295 for an AT Bridgeboard. The system is not cheap and hence not for the home user, but for the video professional it must rate as a very serious contender.

I also understand that Eric Graham of Byte by Byte is writing code for *Sculpt 4D* to access the Targa board directly, rather than go through the *Imagelink* software, the results will no doubt be astounding.

Newtek

● I spoke with Stephanie Bonnett, the international marketing lady at NewTek. As mentioned in last month's column, *DigiPaint 3.0* has been released, but the really good news for us downunder is a PAL version was shipped to Australia early August. NewTek rates well above average in its consideration of Australian and European Amiga markets by consistently providing PAL versions of its products. A major case in point being *DigiView*, it also seems that the Video Toaster has not been given exclusive domain in the U.S.A. and development for PAL systems, while not available in the short term, is not too far behind its NTSC counterpart.

A particularly interesting develop-ment is that permission has been granted by NewTek to Video Comp, a West German company, who will produce the VES-1, a combined video effects generator, genlock, RGB colour splitter and digitizer. The VES-1 will utilize Newtek's *Digi-View* circuitry, of particular note is that the television standard is PAL-D, and hence will be suitable for Australian use. Pricing will be DM2698.00 placing the product within reach of the home video enthusiast.

Artificial intelligence

● *Emerald Intelligence have had some problems in shipping Version 1.1 of Magellan, their artificial intelligence (AI) software package. It seems that just prior to shipping the up-grade in April, a major bug had been discovered. It has since been fixed, and should be shipping to registered owners by late August. Emerald are also offering Developer status to Magellan users, in a bid to develop commercial AI applications for the Amiga. The cost will be US$250 per year which will grant developers higher BBS status and increased technical support, and an option of either a royalty payment to, or marketing support from Emerald for the runtime package.*

Professional Page

● ***Professional Page 1.3* has been released, and now uses AGFA Compugraphic fonts. This will greatly enhance the quality of non-postscript printer output, by printing at the maximum resolution capable of the printer being used. Upgrades will be available for registered users.**

Some new games to look for are *Jonny Quest* from Micriollusions and *It Came From The Desert* from Cinemaware.

A closing recent observation is that Australian distributors are often releasing software concurrently with their U.S. parent, which is good to see, and a case in point, *Music-X* was on the shelves in Sydney at the same time as Los Angeles. There is a downside however. As I do not pay either duty or sales tax on any software I have brought back from the U.S.A., all software is exempt, it remains a mystery to me as to why local pricing has remained high at many outlets. Hopefully we will soon see more sensible pricing locally. *(Indeed, we are seeing just that! Read Notepad - Ed.)*

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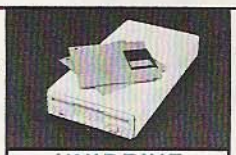

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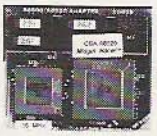

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LETTERS

TO THE EDITOR

Run C64 software and peripherals on Amiga

● I have just recently updated my CBM64 for an Amiga 500 and so far have been extremely happy with its performance. However I still have a lot of software for the C64 and a 1541 disk drive and MPS 803 printer lying around.

I was wondering if you could tell me firstly if it is possible to connect the 1541 and the MPS 803 to the Amiga 500 and secondly is there a C64 emulator available so that I can use some of my C64 software on the Amiga.

S Simpson
Rodd Point NSW

Ed: Most C64 emulators are not worth a pinch of salt. Access 64 will let you use your old peripherals.

Public Domain reviews

● You should have a Public Domain Column to tell Amiga users about the large range of Public Domain disks and programs out and about. The Fred Fish Disks now number nearly 200, and the amount of programs on them is large and there are demonstration versions of commercial software. With someone reviewing the disks in a column then it saves a person from searching a catalogue looking for a program that might interest them. Most of the catalogue entries are a bit cryptic.

I myself only went looking at Public Domain because I was looking for a program called GOMF and that was the only place it was found. Now the latest versions are in the shops at $134.95, and while there I found programs like Mackie (a PopCLI lookalike) and DMouse (a mouse accelerator with a PopCLI plus plus). Plus I got hold of a demonstration version of CygnusEd (a text editor), and while limited to files smaller than 5k, it has made me want to buy the version in the shops worth $120.00

C J Wakeman
Warilla NSW

Ed: We agree! See the column starting in this issue.

Easyscript and the Riteman C+

● Many thanks for the article in your 1989 Commodore Annual "Getting the most out of Easyscript". As a user of the combination shown above I found the article most useful, and have sorted out a 'setup file' as Eric Holroyd suggests (but with functions to suit my setup, of course).

I hope the following notes may help readers who are grappling with the same combination as I have, if you care to print them. Ever since I acquired a secondhand Super Riteman C+ printer (hardly used, for reasons I soon discovered) I have wondered why C.Itoh put such an idiosyncratic printer on the market - perhaps they were just trying to fill too many roles with it. It is very good mechanically though and now that, after several months of experimentation and taking good advice, like that from EH, I feel more in command of the ROMs inside it I have what is, to me, a very satisfactory kit.

My first step towards this happy state was to return the Riteman C+ to the distributors (via a Commodore dealer) to have lts ROMs upgraded from the originals supplied so that it would at least function with a C64 as the Riteman handbook says it should. This cost $45. Now for the idiosyncracy; the printer has two principal modes, Commodore mode and Plus mode, selectable by dipswitch or software command. In Commodore mode it responds correctly to the CBM ASCII character codes used by the C64 but accepts only a very limited range of commands for printing variations, not including underlining, italics, emphasised printing etc. In Plus mode however, all these can be had and more but the printer reverts to the standard "non-Commodore" ASCII character codes. Why, I ask rhetorically, is this so? Why cannot the humble C64 user have all the print controls available in the Plus mode? Well, he can. Enter *Easyscript*, all in shining armour and mounted on a white steed. By selecting printer option 1 (MX80) at the startup, *Easyscript* is persuaded to deliver its text data in standard ASCII. Setting dipswitch 3 of the Riteman C+ ON selects Plus mode and the data is correctly printed and the wider range of print commands of Plus mode are available.

A "setup" file for this arrangment (following Eric Holroyd) is *0=0: 1=1:2=14: 3=15: 4=18: 5=20: 6=45: 7=52: 8=53. With this entered as a format line at the start of a document the print commands below may be conveyed to the Riteman printer with the keystrokes shown (Fl means function key 1, ^ means up-arrow key).

● Expanded characters: on F1 2, off F1 5.
● Compressed characters: on F1 3, off F1 4.
● Underlining: on F1 ^ F1 6 Fl 1, off F1 ^ F1 6 F1 0.
● Italics: on F1 ^ F1 7, off F1 ^ F1 8.

With brief format lines altering two of the definitions made by the setup file the following further commands may be used.

● Emphasised characters: format line 7=69:8=70, on F1 ^ F1 7, off F1 ^ F1 8.

● Double strike characters: format line 7=71:8=72, on F1 ^ F1 7, off F1 ^ F1 8.

● Superscript eg 10^{24}: format line 7=83:8=84, on F1 ^ F1 7 F1 0, off F1 ^ F1 8.

● Subscript eg sub_{script}: format line as for superscript, on F1 ^ F1 7 F1 1, off F1 ^ F1 8.

The extra format lines are necessary because only 10 command definitions are accepted in an *Easyscript* format line, which is not enough to cover all the commands above. Don't forget to restore definitions 7 and 8 if they have been altered and then italics are required. These commands look rather clumsy as described here but in use are quite quick to key in, although a crib sheet with them laid out to aid the memory is certainly necessary to begin with!

I find *Easyscript* an excellent wordprocessor which with my C64 and Riteman C+ meets my typing needs admirably and very cheaply. Now that I have the key to the commands to the printer and can use them from *Easyscript* my satisfaction with the system is complete.

John Spira
Austinmer NSW

Geos and MPS 1000

● At home I have a Commodore MPS 1000 printer, 1541-II disk drive, Commodore 128 and 1084s Monitor. Recently I bought GEOS 128 V2.0 and use it regularly. Because my printer is connected to the computer via a Commodore Serial Bus it will only print 60 DPI, and thus only letting me print about 3/4 of my document widthwise.

In the GEOS 128 2.0 Users Manual Addendum under the Printer Table for the Commodore MPS 1000 it says that a MPS 1000 can print 80 DPI if you have a centronics parallel interface and have the IBM 5152+ driver. What centronics parallel interface would you recommend and about how much would it cost? Remembering that I would need it for other programs, eg *Superbase 128* and *Superscript 128*.

B Nourse
Meadows SA

Ed: Buy either a GEOS cable or Xetek interface.

Amiga 1000 future

● I am a faithful old Amiga 1000 owner who can't really afford to pay for a new Amiga and the market support for the good old 1000 is on the decline. I am concerned whether software written for the Amiga 500 and 2000 in the near future will support the 1000. Does the 1000 run software differently from the 500 and the 2000?

L Chiam
Andross WA

Ed: Virtually all software will operate, although some graphics modes on new programs will not operate. The arrival of version 1.4 of WorkBench may increase the software compatibility gap.

Amiga/MPS 1200

● A Centronics interface cartridge was never made available for the MPS 1200, although mentioned in the manual that it was coming in the future. You probably had ideas of using it with a copy cartridge and a user port to printer cable, but then gave up the idea. Then came along the Amiga 500. You are probably thinking of selling off the faithful C64 and MPS 1200 because it hasn't a Centronics interface. STOP! Think again! For about $90 you could save yourself the cost of a new printer.

Forget the idea of buying a MPS 1250 interface. I was given prices of about $280, if one were available.

Computer Spot have advertised that they have Citizen 120D Centronics interface cartridges for about $90. These will fit into a MPS 1200 if trimmed at the end of the interface case. They should be also available at your local Citizen printer distributor. MPS 1200/1250 are 120D printers fitted with Commodore cases and repositioned control keys. The electronics and mechanics are the same. There is a very short spare parts list for the MPS 1200/1250, so think about using a Citizen 120D as a source of spare parts.

Could anyone supply me with an "On Line" MPS 1200/1250 panel key or let me know where to get one please?

The 120D interface is Epson-IBM selectable. Please consult the 120D manual for more information.

The DIP-switch positions shown below have been tested on an Amiga 500, set to Epson FX. SW1 switches 1-8 are UP for ON position.

Interface DIP-Switch positions

● 1-OFF Cut sheet feed off
● 2-OFF Auto line feed off
● 3&4-OFF Epson FX #1
● 5-ON Line and Block Graphics
● 6-ON Slashed Zero
● 7-OFF Draft (ON for LQ)
● 8-OFF Pica 10 CPI (on for condensed 17 CPI)

K Young
Nunawading VIC

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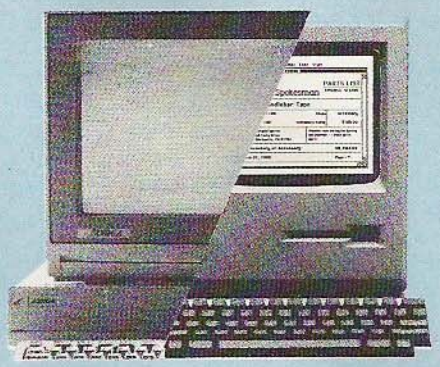
Macintize your Amiga

by Andrew Farrell



We've all had emulation up to our eyebrows. Promises of MS-DOS via software turned out to be so sluggish it was barely worth the disk space. Most of the C64 emulators are too slow and too expensive. And of course, there are dozens of public domain purposefully malfunctioning Atari emulators. Unix emulation is about to be released - which will be exciting for A2500 owners, but then who can afford one of those?

A-Max emulator

● At long last, there is an emulator that's worth checking out. It's a logical step for lovers of emulations - a Macintosh emulator called A- Max. At the hardware level, an Apple Macintosh and the Commodore Amiga have a lot in common. Both use the powerful Motorola 68000 microprocessor. Both are graphic based, and rely on various custom chips to achieve higher processor throughput. Both use the 3 1/2 inch disk standard.

A-Max is produced by ReadySoft, already famous for the entertainment program that won the hearts of animation enthusiasts, *Dragon's Lair*. They have also produced an emulator for Commodore 64 fans who have upgraded to the Amiga.

After receiving my review copy, I was eager to lay hands on a set of 128K Apple Macintosh ROMs. Yes, you do need those ROMs. How you get them is your business. Readysoft kindly include a list of possible suppliers in the United States. Closer to home, several importers of the product are selling the A-Max emulator optionally equipped with the required Apple firmware. The ROMs are not officially available separately through any local dealer I spoke to.

Once you have the ROMs in place, the next essential step is to grab a fist full of good Macintosh software. The simplest way is to borrow a Mac drive from a friend, or if you plan on regularly transferring files to and from true Mac format disks, purchase your own Mac drive. One drive which I have found to be both reliable and good value for money at around $299, is manufactured locally by Computer Discounts. You'll find them at 19-21 Buckland St, Broadway or on (02) 281 7411. You can also purchase A-Max with or without Apple ROMs from the same location.

Once you have a Mac drive, connect it directly to the A-Max interface, which plugs into the Amiga's disk drive port, and you then directly transfer software from Mac format to the A-Max format. The reason Amiga drives cannot be made to read Mac disks is due to a variation in the drive mechanism. Mac drives use a variable speed interface, whereas the Amiga uses a constant speed.

All the necessary hardware should cost you under $750. Add the cost of a 1 Megabyte Amiga 500 ($1300) with monitor ($500) and an external disk drive ($250) and you have one very inexpensive equivalent to a MacPlus. The best part is, in some operations the Amiga is faster. Using an Amiga 2000, with the right accelerator board, and you start to exceed the speed of a Mac II, for far less outlay. An astounding thought - one machine now runs the three major operating systems used in personal computing.

How well does A-Max work?

● Everything I tried worked... eventually. There were a few glitches along the way. Appletalk is not supported yet. Neither are Amiga hard drives, so the system does have a few limitations. But you can work around these. Postscript files from *Pagemaker* must be printed to a file, and then you use a utility supplied by Readysoft called File Dump to get hard copy. Programs which work with the Imagewriter will operate fine by means of the Amiga's parallel port. Serial communication is also diverted to the Amiga serial port.

The screen display is probably the most flexible aspect of the A-Max system. Depending on what Amiga hardware you have, better results can be achieved. Starting from a small MacPlus type screen up to a full 1024 x 800 display using the new A2024 Commodore monitor. The enhanced chip set will also help you obtain a crisper display of the Mac's somewhat more elegant work environment.

However, there were some aspects of the Mac I immediately disliked that I had almost forgotten about. Who ever heard of waiting for a disk to format, or files to copy. I have grown so used to those things happening as mere background task, that at times the Mac was like working with one hand tied behind my back. One whiff of *Hypercard*, *Ready Set Go! 4.5* and *MS-Word* soon fixed that.

There are some fine packages out there that work well on the emulator. Most productivity programs will run. MIDI applications and some games or graphics software will not, depending on the use of directly addressed graphics and bypassing of the standard Apple ROM calls.

For the office worker who uses a Mac by day and an Amiga by night, the possibility of taking work home opens up. Businesses trying to save a few dollars may well consider a combination of the Amiga 2000, with a Mac emulator, a sound investment covering all potential requirements of a PC in any business.

Of course, for us home hobbyist types, it is all just one more flag to wave in the green faces of visitors who are regular hacks of other lesser brands. Amiga has done it again, proving the flexibility of the hardware that was almost only a games machines. ❑

Pactronics newproducts

Pen Pal - AMIGA

This is the word processor that the Amiga world has been waiting for. Although it is graphic based it has numerous features that will set it apart from the rest. Not only can you include graphics (including HAM mode) anywhere on the page, but the text will automatically flow around the picture, even if it's an irregularly shaped graphic. It has a 100,000 word suggestive spell checker, and can use either Amiga fonts or your printer's own native fonts when printing. PEN PAL has a fully integrated database with full search, sort and reporting facilities. One unique feature is its ability to design forms, such as an invoice or an order form. The PAL version is due for release in Australia in late September, and Pactronics are the only authorised distributors of this "bug-free" PAL version.

Birds 'n' Bees - C64, AMIGA, ST and PC

Never before has human sexuality been so highlighted as in recent times. The AIDS epidemic, a growing rate of sexual abuse and advanced education techniques means children are being exposed, more and more, to their own sexuality. BIRDS 'N' BEES has been written by a team of psychologists to allow a child to comprehensively learn about their human reproduction, growth and development, communicable diseases and what your child should know about dealing with strangers.

The programme is fully under parental guidance. Parents can set a password for each child. This password prevents the child advancing too quickly or from just going from one part of the programme to another just out of curiosity.

BIRDS 'N' BEES is the ounce of prevention that is worth a pound of cure.

Video Wizard - C64, AMIGA, ST and PC

The VIDEO WIZARD is a two fold programme designed to both manage and enhance your collection of video cassettes. The first part is a database programme that will track your usage of video cassettes, what is stored where, how much blank tape you have and on which cassette. The second part is VIDEO WIZARD's inbuilt character generator. Using this, you can create professional title screens, link them together in whatever order you want, display them or screen for precise periods, all while you are recording to video tape.

N.B. 1. FOR PCs, THIS PROGRAMME REQUIRES A CGA CARD.
2. FOR PCs, FOR ELECTRONIC TITLE TRANSFER, A CGA CARD WITH COMPOSITE VIDEO OUTPUT JACK IS REQUIRED.

Stop Press - C64

STOP PRESS is possibly the most exciting programme ever to be released for the Commodore 64. It is a highly advanced, feature laden page composition programme that allows you to freely intermingle text and graphics on the one page. You have full cut and paste ability, plus you can import text directly from your word processor. The programme can be controlled by keyboard, joystick, 1351 Mouse, M-3 Mouse or AMX Mouse. The package includes 50 fonts, clip arts, graphic designer and specialised printer drivers.

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QUEENSLAND : Pactronics Pty Ltd, 12 Stratton St, Newstead, 4006. (07) 854 1982
SOUTH AUSTRALIA: Baringa Pty Ltd, (08) 271 1066 ext. 6132
WESTERN AUSTRALIA: Pactronics, unit 13, 133 High Rd Willeton 6155. (09) 354 1122
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Bigger, faster, better - The Enhanced Chip Set

by Dennis Nicholson

MY VERY FIRST personal computer, an Atari 400, came complete with an amazing 16k of memory, and as they say, "That was then, this is now!" My Amiga 2000 cannot even boot-up with 16k, (the info.library situated in the Libs directory is 16.3k!)

Now, we all know why we purchased our Amigas-Wow-ism! "Wow, look at those graphics!" (Possible bumper sticker: *"Amigas don't make amazing graphics, their users do"*, or what about a T-shirt? *"I've been Amiga-ized"*).

Along came the graphics-related software packages that began pushing the Amiga's chip resources to their limits. I began to get little screen messages like..."Terribly sorry ol' bean, but I don't seem to be able to load your requested 704x590 High Resolution 16-colour *DeluxePaint* screen, may I suggest you try a lesser resolution before I Guru you?"

I was miffed! How dare those software writers give their programs such capabilities when the poor Amiga is bursting at the chips to try and run them? Whoever thought that the graphics chip would ever need more than 512k for imaging? How many graphics and animation software packages can you count that will work to their full capacity with 512k using a PAL image, not too many! The techno-buffs at Commodore have realised that if they increase the chip memory, users will be given more freedom to abuse it. After all, isn't that what computing is all about, more power, more power!

The Amiga's new improved whizzbang Enhanced Chip Set will be available in Australia around the end of 1989. So what is the Enhanced Chip Set? (ECS from here on).

The ECS consists of two chips, a new Agnus and a new Denise chip, plus a software JumpStart disk. These will enable an Amiga computer to display high resolution **640 x 512 (PAL) Non-interlaced** screens in up to four levels of colour (two-bitplanes). They will also allow graphics chip memory to be 1meg instead of the current 512k. All programs which open and operate in the Workbench screen will automatically benefit from the advantage of higher resolution text and graphics.

Note that **all** former standard display resolutions and depths will still be supported. The ECS is designed to function with either NTSC or PAL computers. The new high-resolution mode will be called the **productivity** (Super High-Res) mode, and can only be used with a multi-scan monitor, such as NEC'S Multiscan II. Super Hi-Res will **NOT** work on the standard 1081/1084 Amiga monitors! The new ECS will only operate in the Amiga 500 and 2000/2500 range of computers. Because the original 1000 computer uses a rectangular-shaped Agnus chip it will be unable to accept the new square chip, unless some third-party developer comes up with a hardware fix to suit.

New features to the ECS chip set include:

- programmable NTSC/PAL operation
- higher resolution pixels in the new SUPERHIRES mode
- finer sprite position control available in some modes
- hardware sprite DMA memory cycle protection for sprites 0 and 1
- programmable horizontal/vertical beam synchronization and blanking
- extended genlock modes for borders, sprites, and control planes
- less potential lightpen interference with system functions
- 1 megabyte chip addressable memory
- larger blitter operations

Productivity (superhires) mode

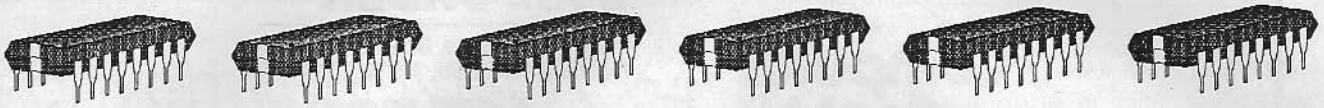
- Such a screen is both Super High resolution and Doublescan. Super High-Res is a new hardware chip mode that squirts up to two-bitplanes out twice as fast as before to keep up with a multisync monitor which can doublescan pixels. Its rate can be adjusted automatically by the hardware to be twice as fast as a normal Amiga monitor.

In order to scan at the high rates necessary to keep up with a multi-sync monitor (31Khz) the chip set must throw out pixels twice as fast as normal to the display. This pixel rate is twice as fast as the current High-Res mode, hence the name Super High-Res. In order to double the pixel rate within standard Amiga bandwidth limitations it implies that Super High-Res mode can only display half the pixel depth as the current mode. This limits Super High-Res displays to two-bitplanes deep, with a four-colour display. It will not support HAM (Hold And Modify) mode.

Standard existing applications (Lo-Res/High-Res etc) will be able to be run with the multi-sync monitor configuration. If they are being run behind the Productivity screen it is possible to drag that screen down to reveal them. BUT, if the special multi-sync (31Khz) scan rate has been activated the background applications will have a different aspect ratio than normal. Because the new scan rate is sweeping the video beam twice as fast as normal the background (e.g; Lo-Res/High-Res) will look short and fat. You will only be able to see 320 High-Res pixels on a scan line or 160 Lo-Res pixels on a scan line. This is known as MIXED modes.

If only half of a Lo-Res or High-Res screen can be displayed on a 31Khz scan line, how can existing applications be used in mixed mode displays? Intuition and graphics will allow you to scroll a screen left and right to reveal portions hidden off to the left or right when in the mixed mode. This does take getting a little used to, but is simply an extension of dragging screens up and down as you do now.

The front screen determines the type of mode you are in. If the frontmost screen is a Productivity screen then the



system will shift into multi-sync doublescan (31Khz) mode. If the front most screen is a normal screen then the system will click back into default single scan rate. Don't run out and purchase a multisync monitor in the hope that you can create graphics in Super Hi-Res mode. None of the Amiga software currently supports this mode, it has yet to be written into the many programs. This will of course change when Workbench 1.4 is officially released sometime in 1990.

One meg of chip memory

● The only real advantage of placing the ECS into your Amiga now is the ability to get 1meg of graphics chip memory. This effectively doubles the amount of memory available for graphics-related work. Don't misunderstand me, it does not add an extra 512k of memory to your system, it gives the graphics chip the ability to process more than 512k of graphics at once. This is fantastic - just imagine running *DeluxePaint* in 16-colour High-Res, with two screens and Stencil running and still leaving around 300k free in the chip memory. In fact, I have had *DeluxePaint*, a large music program, *Pixmate* and *Professional Draw* all running at once!

The two new chips are pin compatible with the current set, so it is just a matter of swapping them over. The Denise chip is relatively easy to replace, but the Agnus, so-called Fat Agnus because of its square shape, is not an easy chip to remove. A special chip tool is required to carry out the delicate operation, something that should be done by a qualified Commodore service centre. But if you must tackle it yourself the following information relates to placing the ECS chips into a 2000 machine.*(NOTE:- The above installation instructions are only valid for Amiga B2000 computers, NOT the 500!)*

● Remove the five screws that secure the top cover, two either side and the fifth at the back.

● Facing the front of the computer slide the top towards you and off.

● Remove the seven screws that hold the power supply and disk-drives to the base of the computer.

● Gently detach the disk-drive cable from its CN303 position on the motherboard, noting the direction of the red wire on the cable.

● Detach the main power plug from the CN400 connector on the motherboard.

● Unplug the LED power-light cable at its two-pin connector.

● Carefully lift out the power supply and disk-drive assembly, it will lift out as one complete unit. (If you have a hard drive installed it will have to be disconnected as well).

● Locate the Fat Agnus in the centre of the motherboard. Take important note of the chip's orientation. You will find a #1 to the right of the chip on the main board, this is the Pin 1 locator. If you take a close look at the original chip seated in its socket you will see a small dimple near one edge of its top section. When the new ECS Agnus is inserted the dimple MUST be aligned with the #1 on the motherboard, failure to place the chip in the correct manner will destroy the new chip on power-up.

● The Agnus chip is extremely well lodged into its socket, the only way the original chip can be removed is with a Chip Extraction Tool, **DO NOT USE A SCREWDRIVER** you will do untold damage to the chip socket! Such an extractor is made by Burndy and called the Chipak Extraction Tool, No: Qilext-1. This tool grabs the chip at two corners and gently lifts it from the socket.

● Insert the new chip making sure the dimple side is aligned to the #1 pin. Using two fingers from each hand apply even pressure to all four corners of the chip. Press straight down until it is well seated.

● Find Jumper J101 located on the lower right side of the CN400 power connector. This jumper consists of three posts, two of these posts are shorted together using a shorting block. Remove the block and move it to the left, toward the power connector.

● Find the J500 jumper on the motherboard. It consists of two square pads with a thin trace wire running between them. This trace wire has to be CUT. Using a sharp Exacto knife **CAREFULLY** cut the trace. (This allows the Amiga to address the 1meg of chip memory).

● For your Amiga 2000 to operate in PAL another trace has to be cut. If it is not the machine will run in NTSC mode. The jumper is the J102 found at the top left corner of the Agnus chip (facing the front of the motherboard). This one is more difficult to cut than the previous J500 jumper as the wire is buried within the motherboard. Take **GREAT CARE** cutting this trace! (It is important to note that once the traces have been cut they cannot be repaired, which will surely void any warranty on your machine).

● The operation is over, re-assemble the computer, cross your fingers, and power up!

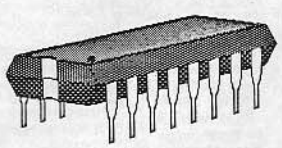
When the computer is re-booted there will be no visible changes to the system until you access a program such as *DeluxePaint*. If the CTRL-A keys are pressed to bring up the Chip/Free memory in the top menu bar you will notice that the Chip memory is now considerably more. As an example you will have over 700k free in Lo-Res (320x256) 32-colour mode.

The jumpstart software

● The JumpStart disk provided with the ECS is a special Workbench disk (the raw beginnings of 1.4) which provides some additional utilities for installing and using the ECS within the Super-Hi-Res mode. This is of little use unless you want to test the new mode on a multi-sync monitor. Several new libraries are contained within the Devs directory that have to be loaded into the system before the new mode will work. The disk that was supplied with my ECS had several Super Hi-Res demo modes that allowed me to at least view a grid-test screen on a multi-sync - it was impressive. Apart from that you will have to wait for the completed 1.4 Workbench and updated software before using this mode.

The main benefit of installing the ECS at this early stage is the increase in graphics chip memory. Having had it installed for the last two months all I can say is, "When are Commodore going to release the 2meg chips?" More power. . . more power! Although details are a little sketchy, we believe pricing is around $45 and a number of service centres currantly have the upgrade available. ❑

Dennis Nicholson is the editor of *Graphicspalette* the Graphics Disk-zine for the Amiga.



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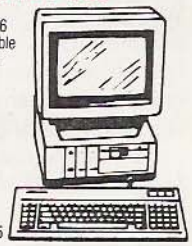

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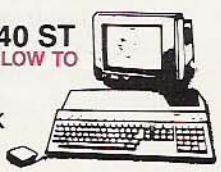

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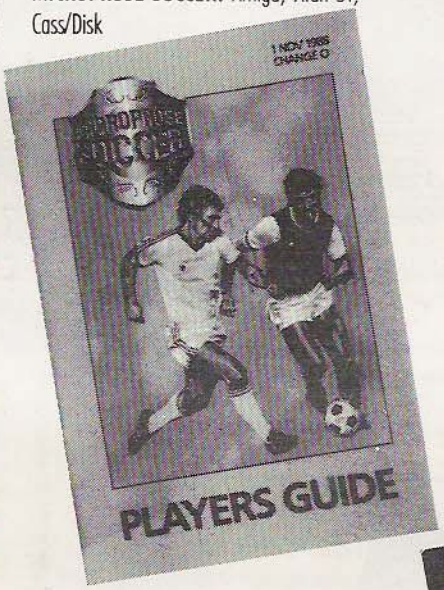

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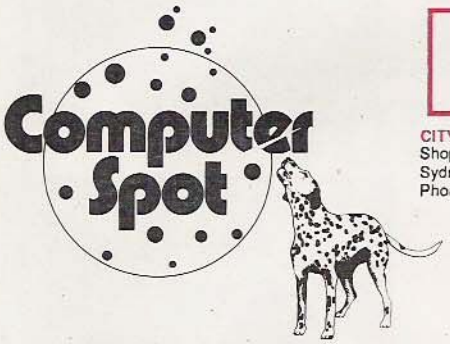

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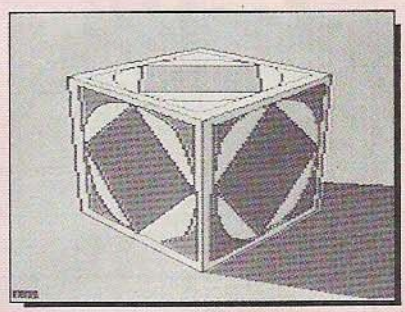
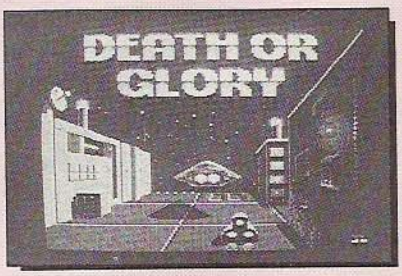
MasterPiece - a new C64 Paint Program!

In the heyday of C64 computing there were at least ten paint programs on the market. A quick count before writing this article showed that there are now possibly four, probably three that are still available.

Doodle is fine for Hi-Res work, Blazing Paddles works well with a koala pad or animation station and then there is the latest addition - MasterPiece. Andrew Farrell checks it out.





COMMODORE C64ERS are alive and well in Britain, and churning out the occasional new title. *MasterPiece* is a new mulit-colour paint program, which also operates in hi-res mode. The menu environment is the now familiar pull down menu system which is joystick operated. Most user options are handled in this fashion.

An additional panel half the screen size enables control of the colour palette, degree of magnification, brush and patterns, which you may choose from a selection of built in designs. I so enjoyed making my own using *Advanced OCP Art Studio*, but then you can't get that program any more so there is little point in my recommending it.

(In situations like that, I wonder whether the copyright law could not make an exception for those dearly wishing to use the program? Perhaps some legal minded reader could enlighten us further.)

The control panel disappears to the half of the screen you are not using when you start to paint. A single key press hides the display altogether so you can see what a mess you've really made.

There appear to be plenty of options in this program, however the user manual is ghastly. It is booklet size when really much more could have been said. Fortunately pull down menus are inherently easy to use, so you can still fumble your way through. Experimentation is a necessary thing, although the tutorials will help you with the simpler features.

Standard tools are all spoken for: Fills, Ellipses, Boxes, Lines, Rays, Freehand Drawing and so on. There are also flood fills, spray paint, sixteen brushes and sixteen built in patterns. All of these facilities work smoothly and quickly.

The limitation of built in brushes is overcome thanks to a grab brush feature which although a little cumbersome can produce some fascinating results. Like any good Amiga paint program, you can grab part of a painting as a brush and then paint with what you have grabbed. The brush may be manipulated in different ways, some of which are useful for three dimensional effects. The grab option even allows you to assign a grab as a part of a font and assign each grab to a key on the keyboard. The possibilities are endless!

Printer support is limited: Commodore MPS801 or Epson FX. Anything else and you're out. A large number of other printers work as an Epson FX clone and many printer interfaces emulate the Commodore MPS801, so it's not as bad as it sounds.

Pictures are saved using yet another funny format unique to *MasterPiece*. A bit of a drawback considering all the fine disks of *Koala* and *Doodle* format art out there.

Being a British program, you can also save your creations to tape. They still use those darn things over there! Overall, *MasterPiece* is not bad at all. It's not as good as some previous offerings, but then it is available, and the price is fairly good. *Blazing Paddles* might still be my preferred choice at the same price of $49.95. Next in line is *Doodle* at $59.95. ❑

Review copy from Computermate (02) 457 8118. RRP $49.95.

A RAM disk for the C64

by Alastair Jeremy

DESPITE THE FACT that the Commodore 64 power-up screen reads "38911 BASIC BYTES FREE", there is really 64K (65536 bytes) of usable RAM. Using this RAMDISK routine, BASIC programmers can store programs up to 28K long (112 blocks) in the rest of this hidden RAM, and still have almost 34K for BASIC programming!

The RAMDISK program makes the rest of this normally inaccessible memory act as a 'RAMDISK', which stores programs in RAM, rather than on disk. As you know, Commodore disk drives are slow, so being able to store large programs in RAM is a great help, since the transfer of the program is not slowed down by external hardware limitations.

In fact, this program can 'load' or 'save' a 112 block (28K) program in under half a second, and can 'swap' two such programs in less than one second. Quite a saving from Commodore disk drive speed! Tape users will reap even greater benefits. Well then, how does it work?

When Commodore made the 64, they equipped it with 64K of RAM. But since a machine needs a ROM operating system, and there is only 64K of addressable memory, the ROM would obviously have to be put 'over' the RAM. The way this works is fairly simple. Location one in the computer's memory has bits in it which control which areas appear as ROM, and which area appears as RAM.

Some areas, however, are permanent RAM, so they haven't got anything related to them in location 1. For example, most commercial programs will switch out the BASIC ROM because the BASIC routines are never used.

So the ROM switch is VERY useful, and is often used. Switching out BASIC frees up an area of memory between $A000 and $BFFF, which is 8K long. Then there is permanent RAM between $C000 and $CFFF, which is 4K. The next 4K of memory can be switched between I/O use, character ROM (containing the data for all the characters on the screen), and RAM.

"Commodore disk drives are slow, so being able to store large programs in RAM is a great help, since the transfer of the program is not slowed down by external hardware limitations."

It is usually I/O, which, among other things, contains sound and graphics registers. Switching this to RAM frees up another 4K. Then finally the KERNAL ROM. This contains the essential routines needed to run the whole show. Switching this out will free up another 8K of RAM.

Obviously you cannot just switch all these ROMs out and expect the computer to keep running. If you switched out the ROMs from BASIC, the BASIC interpreter would crash, so you would have to turn the computer off and on again. This means that the switch must be done from a machine language routine, which is fairly obvious, as using BASIC to transfer 28K of RAM to and from the RAMDISK is completely unthinkable in terms of speed.

However, switching out the KERNAL ROM will mean that no interrupt routines will work, because every fiftieth of a second an interrupt occurs which checks the keyboard and does various other tasks. So unless these interrupts are disabled, then the computer will 'hang up' within one fiftieth of a second.

Luckily this is extremely easy from machine code, so the routine just disables interrupts, switches out all the ROMs, copies or swaps the programs, then switches back the ROMs, and re-enables interrupts before returning to BASIC, all in less than a second. This program takes 4.5K from BASIC free memory as well.

This allows a larger RAMDISK, without taking a lot of memory from BASIC. To use the program, type in listing one, save it, and run it. It will install the necessary code before reducing the amount of free memory BASIC has, and ending in what looks like a power-on situation. Notice, however, that the amount of 'BASIC BYTES FREE' has decreased.

The RAMDISK is now ready to use. To simplify use, the SYS calls to the three RAMDISK routines (LOAD, SAVE and SWAP) are simply offset from address 36352 by nothing, three or six, depending on what operation you wish to perform.

To 'save' a program to the RAMDISK, and therefore to delete anything in the RAMDISK, use SYS 36352.

To 'load' a program from the RAMDISK, deleting the program currently in memory, use SYS 36352+3.

To 'swap' the two programs, use SYS 36352+6.

The swap will put the program currently in memory into the RAMDISK, and at the same time put the program in the RAMDISK into memory.

To clear out the garbage in the RAMDISK before starting to program, type NEW and press RETURN. Now type SYS 36352 and press RETURN. The RAMDISK is now ready for use.

To see it in operation, type in a simple one line BASIC program and type SYS 36352. Now type NEW, and press RETURN. Then type SYS 36352+3, and press RETURN. Your program is back in memory. Type in another small program, and use SYS 36352+6 to swap between the two programs.

For those technically minded, the Commodore's RAM is set up in the following way once the RAMDISK is activated, and when all the ROMS are disabled while the RAMDISK is operating.

$0000 - $07FF System use
$0800 - $8DFF BASIC workspace
$8E00 - $8FFF RAMDISK routine
$9000 - $FFFF RAMDISK storage

Since the RAMDISK is not as big as the amount of BASIC workspace (the RAMDISK is 28K, and BASIC has 33.5K), it is possible that one day there will be a program too large to fit in the RAMDISK. To indicate this error, the border will flash many different colours for a short time, then control will be returned to the user.

In this case you will have to use the normal save and load commands for disk and/or tape. The RAMDISK is not as big as BASIC workspace simply because every program needs room for variable storage, and as a program's size increases, usually so does the amount of variables increase.

Therefore, having a 30K RAMDISK, and 30K BASIC memory is a waste of RAMDISK space. Remember that this program does not store anything onto disk or tape. To store the final copy of anything you are working on you will have to use the normal save and load commands. Well, there you have it.

Fast-Load cartridges claim 'amazing' speeds of less than around 7 seconds for 100 blocks. Now everyone can have a fastload/save/swap which does 112 blocks in under one second, a speed which is simply not physically possible for disk or tape drives! ❑

BOOT RAM DISK

```
10 poke 643,255:poke644,141
20 sys 64767
```

RAM DISK C64

```
800 s=36352:n=319:print"■installing ramdisk code■"
810 fori=stos+nstep16:a=0:forj=0toi5:readp:ifp<0orp>255thenc=0:a=1:goto830
820 pokei+j,p:a=a+p:next:readc
830 ifc<>athenprint"data error in line";(i-s)/16*10+1000:end
840 next:print"ramdisk installed"
850 end
1000 data76,9,142,76,84,142,76,156,142,32,0,143,120,165,1,141, 1505
1010 data64,143,41,248,9,4,133,1,165,43,141,59,143,165,44,141, 1544
1020 data60,143,133,252,165,45,141,61,143,165,46,141,62,143,168,200, 2068
1030 data152,141,63,143,169,0,133,251,133,253,169,144,133,254,32,33, 2203
1040 data143,230,252,230,254,165,252,56,237,63,143,208,241,173,64,143, 2854
1050 data133,1,88,96,120,165,1,141,64,143,41,248,9,4,133,1, 1388
1060 data173,59,143,133,43,173,60,143,133,44,133,254,173,61,143,133, 2001
1070 data45,173,62,143,133,46,168,200,152,141,63,143,169,0,133,251, 2022
1080 data133,253,169,144,133,252,32,33,143,230,252,230,254,165,254,56, 2733
1090 data237,63,143,208,241,173,64,143,133,1,88,96,32,0,143,120, 1885
1100 data165,1,141,64,143,41,248,9,4,133,1,165,43,170,173,59, 1560
1110 data143,133,43,138,141,59,143,165,44,170,141,60,143,133,44,138, 1838
1120 data141,60,143,165,45,170,141,61,143,133,45,138,141,61,143,165, 1895
1130 data46,170,141,62,143,133,46,138,141,62,143,232,138,141,63,143, 1942
1140 data165,44,133,252,169,0,133,251,133,253,169,144,133,254,32,43, 2308
1150 data143,230,252,230,254,165,254,208,245,173,64,143,133,1,88,96, 2679
1160 data165,46,56,229,44,56,233,112,16,1,96,104,104,162,255,173, 1852
1170 data32,208,160,255,238,32,208,136,208,250,202,208,245,141,32,208, 2763
1180 data96,160,0,177,251,145,253,136,208,249,96,160,0,177,251,170, 2529
1190 data177,253,145,251,138,145,253,136,208,243,96,1,8,3,8,9, 2074
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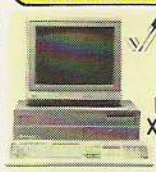

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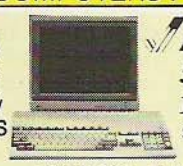

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RAM DISK - SOURCE CODE

```
10 *= $8e00
20 .d m.ramdisk
30 .s
40 ;      ramdisk source code
47 ;--------------------------------
48 ;     assembled using 'lads'
49 ;-------jump table---------------
50 jmp store
60 jmp retrieve
70 jmp swap
75 ;-------store program------------
80 store jsr check : sei
90 lda $01 : sta tempzp
100 and #$f8
110 ora #$04
120 sta $01
130 lda $2b : sta bslo
140 lda $2c : sta bshi : sta $fc
150 lda $2d : sta belo
160 lda $2e : sta behi
170 tay : iny : tya : sta end
180 lda #$00 : sta $fb : sta $fd
190 lda #$90 : sta $fe
200 moveto jsr transfer
210 inc $fc : inc $fe
220 lda $fc : sec : sbc end
230 bne moveto
240 lda tempzp : sta $01
250 cli
260 rts
265 ;-------retrieve program--------
270 retrieve sei
280 lda $01 : sta tempzp
290 and #$f8
300 ora #$04
310 sta $01
320 lda bslo : sta $2b
330 lda bshi : sta $2c : sta $fe
340 lda belo : sta $2d
350 lda behi : sta $2e
360 tay : iny : tya : sta end
370 lda #$00 : sta $fb : sta $fd
380 lda #$90 : sta $fc
390 movefrom jsr transfer
400 inc $fc : inc $fe
410 lda $fe : sec : sbc end
420 bne movefrom
430 lda tempzp : sta $01
440 cli
450 rts
455 ;-------swap programs-----------
460 swap jsr check : sei
470 lda $01 : sta tempzp
480 and #$f8
490 ora #$04
500 sta $01
510 lda $2b : tax : lda bslo
515 sta $2b : txa : sta bslo
570 lda $2c : tax : sta bshi
525 sta $2c : txa : sta bshi
530 lda $2d : tax : sta belo
535 sta $2d : txa : sta belo
540 lda $2e : tax : sta behi
545 sta $2e : txa : sta behi
550 inx : txa : sta end
555 lda $2c : sta $fc
560 lda #$00 : sta $fb : sta $fd
570 lda #$90 : sta $fe
580 swapit jsr swaplp
590 inc $fc : inc $fe
600 lda $fe
610 bne swapit
620 lda tempzp : sta $01
630 cli
640 rts
999 ;--------subroutines-----------
1000 check lda $2e : sec
1010 sbc $2c : sec
1020 sbc #$70 : bpl nocopy
1030 rts
1040 nocopy pla : pla
1050 ldx #$ff : lda $d020
1060 manloop ldy #$ff
1070 zaploop inc $d020 : dey
                : bne zaploop
1080 dex : bne manloop
1090 sta $d020 : rts
1100 transfer ldy #$00
1110 tloop lda ($fb),y
1120 sta ($fd),y
1130 dey
1140 bne tloop
1150 rts
1160 swaplp ldy #$00
1170 sloop lda ($fb),y
1180 tax
1190 lda ($fd),y
1200 sta ($fb),y
1210 txa
1220 sta ($fd),y
1230 dey
1240 bne sloop
1250 rts
1999 ;-----reserve storage space----
2000 bslo .byte 0
2010 bshi .byte 0
2020 belo .byte 0
2030 behi .byte 0
2040 end .byte 0
2050 tempzp .byte 0
32000 .end source code
```

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Kindwords 2.0 ...

Wordprocessing on the cheap!

by Andrew Farrell

A COMPUTER WRITER'S wordprocessor is a close friend and companion. No fussier user can there be.

Here I am wordprocessing on a $99 program. You may consider me strange since I have eight solid wordprocessor packages to choose from - the most expensive costing a little under $500.

So I ask myself, which wordprocessor would the average Amiga user be content with when nearly every last cent has already tumbled into the hardware coffers? In answer, there can be no better value than *Kindwords 2.0*, now distributed in Australia by Dataflow for an amazing $99 recommended retail. What talents does one receive for this miserly price tag?

Kindwords is a fine middle of the road WYSIWIG wordprocessor. Enhanced output is achieved by *Kindwords* using its own unique printer drivers. This far exceeds the quality viewed on screen and the quality normally produced on a dot matrix printer. Some improvements mean a small trade off in another related area. In this case, the number of available fonts is reduced. Standard fonts cannot be used.

Nevertheless, *Kindwords* has plenty of other fancy footwork. Setting text attributes such as justification requires a mere mouse click on the right gadget. Tabs are equally as easy to set or alter. Headers and footers can be added, with page numbering, as well as the page length and margins set using pop-up menu screens. An exceptionally clear and easy to use arrangement.

Under the extras menu you will find some of the most astounding features for a program in this price range. Full find and replace, a 100,000 word Merriam/Webster spell checker, 470,000 synonym thesaurus, and hyphenation control are all available. The dictionary and thesaurus may be optionally loaded into RAM if you have enough to spare. This greatly enhances the speed of operation of these functions.

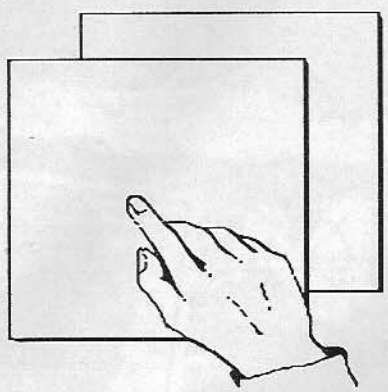
Another smart feature is the ability to include graphics in up to 16 colours. Once imported an image can be cropped, sized and edited. Both low and medium resolution images may be used. High resolution images will import, however they are automatically reduced to medium resolution.

On screen editing is comprehensive. There are short cut keys for most menu options. A pop-up menu with a condensed listing of every key function is available at any time. I was impressed by the ability to move by character, word, line or paragraph. Deletion is also supported in varying degrees. Of course, you can also use the mouse to highlight text prior to copying, pasting or deletion.

Other features include page numbering, mail merge, superscripts and subscripts, and fonts for maths, Greek and symbols. Both disks in the package are unprotected, and the program can be installed on hard drives without any problem.

Overall *Kindwords 2.0* is excellent value, with plenty of punch for the average user. My only gripes are the lack of a word count function and the slightly clumsy selection of different devices when using the file requester. Considering that *Kindwords* at $99 is truly top value, there is little else I could complain about. The nearest competitor would be at least twice the price. ❑

Review copy from Dataflow (02) 331 6153.



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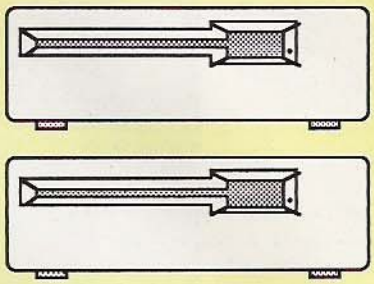
Align your own 1541



by M. Zolin

WE ALL KNOW how the 1541 drives, particularly the earlier ones, have a bad habit of pushing themselves out of adjustment with use. We also know that realigning the drive is a very tricky matter. It should only be tackled by qualified technicians at approved workshops and all that stuff.

We also know that, promises notwithstanding, those same workshops could have to hang on to your drive for weeks. That can have results varying from the annoying to the disastrous.

Faced with the possible loss of my drive for that length of time, I decided that I could at least try to do something about misalignment myself. Let me say right here that the drive was long out of warranty and so there was little to lose by my "having a go". Let me also say that I have been dealing with electronics and the fiddly mechanics that go with them for a quarter of a century.

The job of realigning the drive requires a certain skill. If you have five thumbs on one hand and three toes on the other, just read this as fiction and take your drive to the workshop and those qualified mechanics. But out there in computer world there are a lot of people who would have no qualms at taking a hi-fi machine apart. Doing the disk drive is no harder. By the way, it took me a number of sessions with my drive over six months before I got the technique straight. The rest of the article describes the final version - the one that works.

It is commonly thought that you need special gauges and tools to fix a misaligned drive. You can buy (in the USA) a kit and manual that will let you do a professional job. My method is probably frowned upon by the purists, but I find it works well enough to let the drive read and write any disks and that the disks it produces are readable by other drives. What more do you want?

There are two levels of repair available. The first is a sort of Band-Aid and aspirin approach. The second is the big whammy to use when the first no longer works.

For the first you will need the following tools:

- Philips head screw driver with a 4mm shank
- ordinary flat screw driver with a 4mm blade
- commercial floppy disk (see later for why)
- bottle of Loctite (R) 601 (from your friendly auto parts store)
- and the program :-

```
10  OPEN 15,8,15,"1":TK=18:GOSUB100
20  OPEN 2,8,2,"#":GOSUB100
30 PRINT#15,"U1:2,0,1,10":TK=1:
GOSUB100
40 PRINT#15,"U1:2,0,35,10":TK=35:
GOSUB100
50  GET A$:IFA$<>"Q"THEN30
60  CLOSE2:CLOSE15:END
70  :
100 INPUT#15,A,B$,C,D
110 PRINT "TRACK";TK;A;B$;C;D:
RETURN
```

For the whammy you'll need all of that plus either a small bearing puller (instrument type) or another 4mm straight blade screwdriver - not really specialized tools.

Why the commercial floppy? Simple, we assume that a commercial floppy will have been formatted on a machine with proper head alignment so that its tracks will be in the right place and within tolerance limits. I used an *Easy Script* disk successfully but it is preferable to use a disk without header error copy protection.

If a disk has an error in sector 10 of tracks 1 or 35 the program above won't work. We use the commercial floppy as our gauge for setting the head on our machine.

Opening the drive

- For both methods you must first open the drive. Start by unplugging power and serial cables from the back. Then find a clean, dust-free place to work. A laminate covered kitchen table is ideal.

Turn the drive on to its back and remove four Philips head screws in wells at the four corners of the base. Grasping top and bottom securely, turn the drive back on to its base and pull off the top. This will expose the printed circuit board (pcb).

For the Band-Aid method you needn't remove the pcb. Instead remove six Philips head screws that hold the metal frame on to the bottom half of the plastic case. Carefully separate the "works" from the case and put the case aside.

Finding the adjustment

- Turn the metal frame on its back so that the pcb is on the bottom. Be careful not to bend the electronic components or put too much load on them. A cushion or folded towel under the board is not a bad idea if you haven't got a better support.

Look at the bottom and identify the bit of the power transformer that sticks out. Between the transformer and the front of the drive you will see a couple of cutouts in the metal bottom revealing a multicoloured cable and two mounting lugs for the stepping motor that drives the head. The motor is quite a flat device something like 70mm in diameter, 15mm thick, with a shiny aluminium bottom, cad-plated case and cad-plated mounting lugs.

The alignment

- The motor lugs are clamped to the drive base with two Philips head screws and washers. The screws will be held with a dob of cement (usually green). Break the cement dob and loosen the clamping screws one full turn.

Now take the drive (in its broken down form) to the computer. Reconnect the power and serial cables, make sure there is no metal to form short circuits and rest the drive upside down in its usual working spot. Again some cushioning won't do any harm.

Continued on page 34

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Switch on

● Type in the program above, make sure your commercial disk has a write protect tab on it and insert the disk in the drive (upside down because the drive is upside down). Close the gate and type "RUN". You will hear the drive start up and the head moving back and forth.

The misalignment should show up either as flashing of the red LED on the drive or as messages like "AA READ ERROR XX YY" where XX and YY are the track and sector number respectively. Let the drive keep running, and using the flat blade screwdriver as a lever move the stepping motor so that the slots in the lugs move relative to the clamping screws.

You should find that in some positions of the motor lugs you get all "0OK00" messages and at others you will get errors either in track 1 or track 35. If you are lucky you will find that at one end of the movement you will get track 1 errors and at the other track 35 ones.

Whatever is the case, find the limits of the position where no errors come and mark them. If only one limit is found, mark it.

Then move the lugs to either between the marked limits or to some place between the one limit and the end of movement that shows no errors. Tighten the clamp screws. Seal them with a small drop of Loctite (R). Pres "Q" to stop the program. Remove the disk from the drive. Put the drive back in the case and put all the various screws back. That's it. End of job.

There's only one problem with that, it will need to be done again another time. To prevent that, you need the big whammy. The reason for the machine going out of alignment all the time has to do with bad selection of materials in the mechanical drive itself. By the way, the mechanical part of the drive is not a Commodore product, it's a standard piece of machinery that Commodore incorporate into the 1541.

The materials that are a problem are the combination of a diecast cam and a steel spindle. With the first press-fitted to the latter you get a condition called "creep" in which the diecast loses its close tolerance and sort of grows to be a loose fit on the spindle.

When you use protected disks or format a new disk the drive indexes itself by bumping against an end stop. The bumping causes slippage between the cam and the spindle and hey presto, a misaligned drive.

What we have just done with the Band-Aid method is to get rid of the misalignment, not cure the problem. It isn't wise to apply the big whammy the first time a misalignment happens. You may be able to get away with the simple alignment and get a drive that won't go out of shape for years. On the other hand, most people find that once the misalignment starts it will recur, no matter how many times it is corrected. If this starts to happen then it's time to take more drastic steps - which will be described next.

The whammy

● Open up the case as described above and then take off the printed circuit board (pcb) as described below.

Remove the PC Board

● There are a number of different designs of pcbs used in different versions of the 1541 so there is no point describing one. They all have one common feature that they are connected to the "works" by plug connectors around their edges.

There will be a power plug (four heavyish leads) somewhere towards the right back of the board. A set of three multi-pin sockets are along one edge (usually left looking from the front). A three pin socket connects to the green LED in the front of the case and another socket (black, five pin with black cable) connects to the read/write head. Note the position and alignment of all these sockets and unplug them and any others you may find with cables going off the board. Observe the usual precautions needed when handling micro components of micro-electronics. If you are a novice at this or the drive is under warranty, put it all back together again; believe me, it's cheaper to let somebody else do it in your case.

Remove a number of Philips head screws that hold the pcb down. Remove the board and put it aside.

Getting at the works

● Look closely at the metal frame and "works" you have left and you will see that it comprises two major assemblies. One assembly is mainly brown plastic and diecast and carries the business part of the drive, the other is a pressed metal frame that carries the transformer and a few minor bits and pieces.

We have to remove the actual drive from the pressed metal frame. Do that by removing four Philips head screws that go from lugs on the side of the pressed metal frame to the brown plastic of the subframe. Lift and slide out the subframe, being very gentle and very careful not to bump the read/write head (a black plastic thing like a wide clothes peg). Put the pressed metal frame aside.

Identifying the head drive

● Place the subframe, bottom down, in front of you, disk inserting slot closest to you. Identify the read/write head (the black hinged plastic thing in the middle). Keep fingers, tools and anything else away from the head for the rest of the time the drive is open.

To the right of the head assembly you will see a thin metal ribbon running around and between two metal cams. One cam has two "turrets" on top: that is the culprit. It's the cam that has been slipping. It's the one we're going to stop and stop good.

Fixing the problem

● The turreted cam is mounted on the stepping motor shaft. Before we can do anything else, we have to remove the metal ribbon. This is secured to the turreted cam by a small Philips head screw on the side.

Rotate the cam without putting pressure on the ribbon until the holding screw is accessible to the screwdriver. Now unhook a helical spring that keeps the non-turreted cam tensioned, loosen and take off the ribbon holding screw from the turreted cam and let the ribbon hang free. Turn the sub assembly upside down, making sure you don't put pressure on the head or guides, and locate the stepping motor.

This is described in the earlier section titled "Finding the Adjustment".

Remove the two stepping motor clamping screws and gently pull off the stepping motor from the sub-assembly. You will find the turreted cam on the end of the motor shaft. Use the bearing puller, if you have one, to pull the cam up from the shaft. If you don't have the puller use the two flat bladed screwdrivers working on opposite sides of the shaft to prise the cam upwards. Don't pull the cam right off, one half to two thirds of its thickness should be free of the shaft but the cam should still be solid on the shaft. Clean the well formed by the cam centre and

the top of the shaft with clean Shelite (R) or similar, place a drop of Loctite (R) in the well and press the cam down to its original depth on the shaft.

Don't be too slow at doing this and don't hammer the cam down. Hard thumb pressure with the motor resting on a solid surface should be enough. If you're worried about it, try moving the cam a few times without putting the Loctite (R) in the well just to make sure you know what you are doing.

In the process of moving the cam you may find that it rotates relative to the shaft. That is no problem. The slotted lugs have enough adjustment to take care of a full "step" of adjustment.

Avoid scratching any metal surfaces or otherwise makeing things by being too heavy-handed. If pushing the cam down is very difficult try making some sort of lever system with a piece of wood.

When the cam is in position put the motor back on its mounting screw, leave the screws finger tight. Replace the ribbon on the cams and rehook the tensioning springs. A pair of tweezers often helps in handing the ribbon.

Make sure the ribbon rests flat on the cams and hasn't been forced out of position by the final tightening of the screw. A very small amount of Loctite (R) will seal the screw. In seconds the Loctite (R) that got between the stepping motor shaft and the turreted cam will have set to prevent cam movement. It won't prevent future removal of the cam but will stop it turning. Wipe off any excess Loctite (R) that has remained liquid. Put the sub assembly back into the pressed metal frame, reinstall the pcb and replug the sockets that feed it. Now go back to the section above titled "The Alignment" and work your way through the procedure to "...End of job".

You now have an aligned drive which should stay aligned for many years. One word of warning, though. Temperature has an effect on the state of alignment so it might be wise to give the machine the treatment for a while.

Heat treatment

● Put the assembled machine back in the plastic case without either fitting the metal-frame-to-case screws or the case-closing screws. Close the case and put the drive in its usual place. Connect up to the computer, put in the commercial disk, have the test program in memory and run it. Watch the drive running for anything up to 20 minutes. It won't do any harm if you haven't got dirt and dust on the disk or head. If the drive starts giving read errors again do a realignment with the drive hot.

Conclusion

● It's hard to imagine why neither the sub assembly manufacturer nor Commodore take the simple action of some Loctite (R) or similar chemical bonding trick between the shaft and cam. It would save a lot of trouble. Prevention is always so much better than cure. I can't see it increasing the equipment price by more than cents. Alternatively a small amount of keying would work wonders. I suppose, in the end, it's fun to get around the built in faults provided free of charge by our equipment manufacturers. ❑

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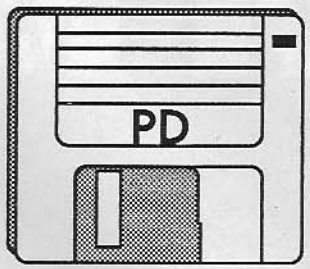


by Andrew Farrell

Software can become an expensive proposition if you plan on collecting a program for every little thing you want to use your Amiga for.

THERE IS AN alternative, that is inexpensive, interesting and far more exciting. Public Domain software is programs that have been made freely distributable by the authors. The most notable collection is compiled by a man in Canada called Fred Fish - his disks being referred to as the Fish Disk collection.

There are now nearly 230 Fish disks, probably more by the time you read this. As well as Fish disks, there are dozens of other smaller collections and many non-copyright programs that are merely floating around. Some care must be taken in using these programs as some may be bug-ridden, virus-infested or a plain waste of time to bother collecting or downloading from your nearest Bulletin Board.

At the request of many of our readers, we have decided to start a semi-regular look at new Public Domain programs - and recommend some of the better titles.

ANIMATION

● The latest swag of Fish disks and other public domain offerings seem slanted toward animation. Many of the programs turning up were entries to an animation contest held in the United States. A few are quite good, however two or three are brilliant. They are well worth including in your software library if you like impressing your friends or turning the faces of nearby Apple owners a dark shade of green. Some are just plain impressive, and as usual a few are downright hilarious.

"Not Boing Again"

Fish 200
Memory: 1MB

● Yet another variation on the "boing" theme. Remember the giant checkered ball which bounced around early Amiga demos? The ball has become as much a part of the Amiga trademark as that irksome tick. Anyhow, this ray-traced interlaced cartoon is sure to please old Amiga fans. Some nicely placed sound effects too. Also on the same disk is a fish tank emulator with some unusual critters up to some unusual antics inside.

Walker Demo I & II

Prime G20
Memory: 1MB or 2MB

● Our front cover says it all. Digitise some action from the movie *The Empire Strikes Back*, add it to some familiar back drops with sound and a few laser blasts and you have one very smart animation sequence. A two-disk two-megabyte version is also available (Prime G21,22). *Walker Demo II* is also available - more atmospheric but less dazzling - two megabyte version only. (Prime G23,24).

Luxo Teenager

Prime G25
Memory: 1MB

● Some fancy raytraced animation with that lump in the throat aftereffect. Based on a famous sequence of far greater proportions on a far greater collection of hardware. The Amiga version captures the spirit of the original well. Short but sweet - bound to impress!

PRODUCTIVITY

● Some of my all time favourite productivity tools were sourced from public domain disks - the best calendar, reminder, clock and calculator programs, the best system utilities, the best text editors and so on. Well, some have some commercial contenders these days, but price-wise the public domain offerings are still very good. Here are a few recent entries to the fray.

Calc

Fish 210
Memory: n/a

● Ever wish you had a calculator that worked like your old C64's BASIC? You know, where you can see what figures you've entered before you hit return. You could even edit them if you made a mistake! Well, Calc is my choice. It iconifies into a small calculator icon, has pull down menus, and works with my A2000 keypad. Very easy to use, logical functionality and very powerful.

JazzBench

Fish 228
Memory: 1MB pref.

● One click on the startup icon and JazzBench gave Workbench a heave, leaving behind a faster, jazzier, potentially smarter operating environment. The instructions suggest it is possible to run the current version in 512K with some fiddling. Many of the features of JazzBench are based on, or inclusions of, popular public domain Workbench enhancement programs which have been around for some time. The beauty of JazzBench is that they are now in one neat package.

A back drop is the first extra. Open a disk icon and you will see the next big step forward. No more sleeping pointers. This makes for much faster operation when you have many disk devices. Better still, once you have opened a full window of icons it is possible to iconify the window. This mysterious process is fantastic for hard disk users. Here is how it works.

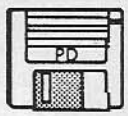
You open your main hard disk window, or any other window for that matter. It is full of icons, probably drawers, and takes some time for all the icons to appear. From time to time you must close this window to make room, and then open it again later when you wish to access a different program. Again you must wait for all the icons to appear. This pro-

cess is a fine substitute for herbal sleeping drops. If when you first open the window you then iconify it, the window is snapshot and reduced to a very small icon on the left of the screen. A single click on this icon at any later time and the entire window with all the icons intact reappears instantaneously. This very small addition to Workbench can save hours of waiting.

Closing an open window is reminiscent of the Apple Macintosh. Unlike the Macintosh, whilst the fancy graphics are sucking the window back into the disk icon, your pointer is free to move to another disk and open it. JazzBench has a great feeling of freedom.

There are dozens of other improvements, some of which are not yet complete. There are a few known bugs, none of which are too serious. You can personalise everything about JazzBench, even the response the Amiga gives to errors. As the disk arrives, attempting an illegal function causes the message "I'm sorry Dave, I can't do that" to be played. The voice is digitised from the movie *2001, A Space Odyssey*. You can change the message to suit yourself.

I like JazzBench. Combined with the AmigaDOS replacement project - also in the public domain - Amiga's operating system gets a much deserved face lift. ❑



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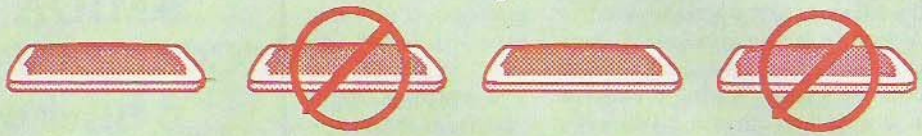
To buy or not to buy...

by Trevor Hodges



Here at the Australian Commodore and Amiga Review, we are strong believers in saying what we think. On occasion this has gotten some of us into trouble. I should point out that the views expressed in the following article are not necessarily those of the editor or publishers. However, they are certainly the views of many consumers. This article was unsolicited. I hope you find it helpful - Ed.

IF YOU'RE LIKE me you approached the purchase of a computer in a state of naive ignorance. I had blithely assumed that once the Amiga was unpacked and plugged in that would be it - I'd be word processing, spread-sheeting and databasing fit to bust. It was only after it was too late that I really discovered the horrendous price of software. Like many others, it had been brought home to me that buying the computer was only the first step, the second was acquiring some software.

I use the word "acquiring" very deliberately. Almost everyone I know who owns a computer has some smartalec friend who knows everything there is to know about computers. "Go on, get an Amiga," he cajoles, "I can get you all the software you'll ever need for nuffin. Heh, heh, heh...."

He'll probably try to sell you some dirty postcards as well. At first this would appear to be the ideal solution, free software with no questions asked. However I've come to believe that there are some real problems with this course of action and I'm no longer certain that illegal copying of software is all it's cracked up to be. Now don't get me wrong, I'm not saying that I've never owned illegal copies of software. As a matter of fact I quite willingly admit to it and anyone who tells me that they don't own any pirated software is either a liar or only bought the computer yesterday and hasn't had time to copy any yet. I suppose I could try to bore you into agreeing with me about not copying software by detailing a long list of lofty moral and legal arguments.

The fact that it's illegal and that software developers have families to feed is not least among these. However it's probably better to appeal to your self interest rather than give you a sob story about software authors.

First of all ask yourself this, what sort of software do you get when you make illegal copies? Nine times out of ten the answer to this would be games. Now this is fine if all you ever wanted to do was fight off hordes of aliens. However, if that was all you wanted why didn't you buy a "games" machine? These are a fraction of the cost of an A500 which, while being a very competitively priced machine in its field, is still very expensive when compared to straight games machines. You could have bought an awful lot of commercial games software with the money you'd have saved.

OK, let's imagine that you've cracked the big one and managed to lay your hands upon some useful applications software, perhaps a good wordprocessor or paint program. It's been my experience, well, friends have told me this is the case, that this sort of software is often next to useless without the accompanying manuals. While it is possible to run much of this software quite happily it's more than likely that without the manual you're not fully utilizing its potential. Perhaps you can photocopy the manual provided by this "friend" of yours, that's if he has one? My local library charges 20c per copy and at that price you'd have been better off buying the commercial package.

If you do have some pirated software, and I'm pretty certain that anyone reading this article is bound to own at least a few pieces, take a moment to look at what you've ended up with. It's more than likely that you've got a few pieces of good, useful software which you can't work out how to use properly and dozens of games which you got bored with after five minutes anyway.

More often than not you'll blame the computer for not doing the things you want when the real reason you feel like head-butting the keyboard is that you don't really have the software you need. I wouldn't recommend this course of action by the way, it leaves a rather nasty checker-board pattern on the forehead.

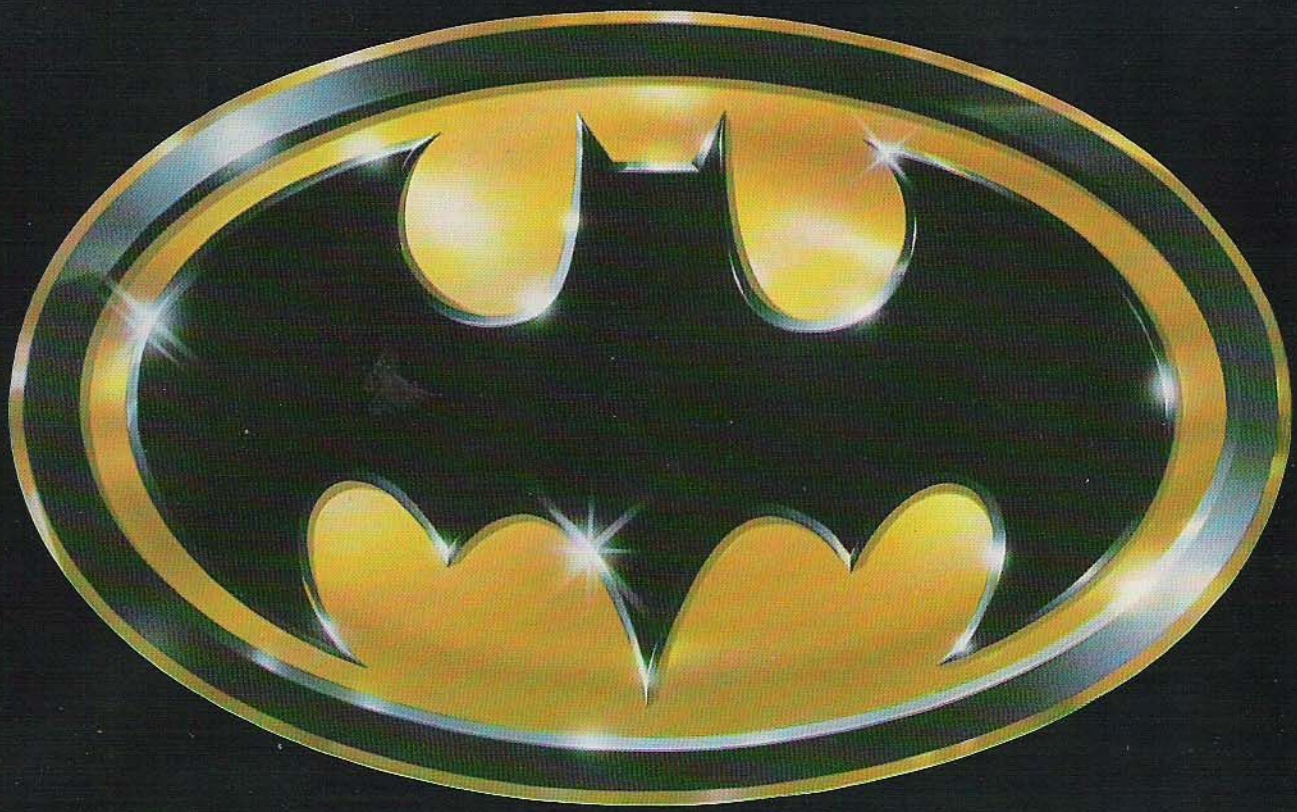
Despite all the devilish delight you experience with each piece of new software you pirate, what you get lumbered with is other people's choices. You're forced to accept what somebody else decided to buy at the time of the original purchase. Perhaps you do get the software you want when you want it. If so then you probably spend most of your time copying software and hardly any actually using it. Your buccaneering friends must be better organised than mine.

If I haven't yet convinced you to buy your software rather than pirating it then you're a hopeless case and you should seek specialist advice. If however you're beginning to be swayed or you haven't yet been sullied by piracy, your plaintive cry probably goes something like this, "But software is so expensive, I can't afford it!" Up to a point I agree with you, software in Australia is expensive, often unnecessarily so, but a major component of the exorbitant prices charged by retailers and importers is due to the rampant piracy which goes on.

(Recent dramatic price cuts have slashed holes in this argument. the wordprocessor KINDWORDS is now $99, and the desktop publishing program PROFESSIONAL PAGE will soon be cheaper to buy in Australia than to order direct from the United States. - Ed.)

I'm not trying to convey the impression that the distributors or retailers of software in this country are entirely blameless. Profit margins do vary from

Continued on page 42



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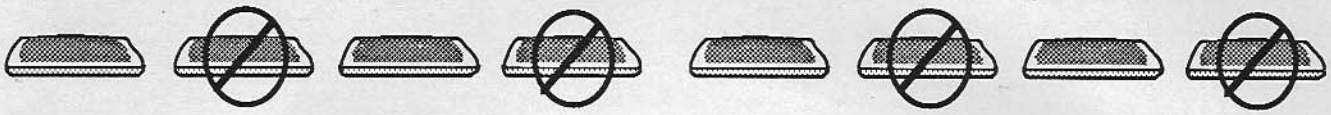

retailer to retailer but the average mark-up on wholesale prices normally comes in at between thirty and forty percent. A piece of software with a wholesale price of say $30 would normally retail for around $44, and this is only the wholesaler's recommended retail price.

Retailers sometimes charge higher than recommended retail prices. Their reasons for doing this are many and varied but the most common one would appear to be that a thirty to forty percent markup is simply not high enough for the small volume of software they sell. With the prices currently being charged for some products it is little wonder that they sell very little.

Of course there isn't much you can do about the development costs of software in America, the exchange rate, the number of middlemen between you and the software author. However there are some things you can do to reduce the costs of the software you buy. Below is a list which might help.

(We should point out that there is something distributors can do, and they are doing it. Electronic Arts, Mindscape, Aegis, Gold Disk and the Disk Company are now directly represented in Australia with correspondingly new price structures which appear far more reasonable. - Ed.)

Stay Informed

● The old adage, "buyer beware" certainly applies to the purchasing of software. Before buying anything read everything you can get your hands on, this magazine for instance. Compare the prices offered in the advertisements and and try to find the time to pay a visit to the store concerned to compare the shop prices with those advertised.

Catalogues

● If a free catalogue is offered by a retailer send for it or get a copy from the store if they have a retail outlet. These catalogues normally include the complete range of software held in stock. These can be used as an easy reference guide against which to compare other sources of information and price lists from alternative suppliers. Be careful with these however, they can go out of date very quickly. Even if a company doesn't offer a catalogue write or ring and ask for one. If they say they don't maintain one ask them why not.

Interstate

● Don't be afraid to purchase mailorder software from interstate because you think it will take longer to arrive. This is normally not true and often these companies will go out of their way to get the stock to you as quickly as possible in the hope of repeat orders.

One of the best mailorder software companies I have had contact with is in the ACT. I put my order in the letter box on a Tuesday and it arrived back on the Friday of the same week. A Sydney company I ordered stock from on the same day took three and a half weeks to get the item back to me. This should be balanced against the fact that they were charging five dollars less than anyone else for the item I wanted. If you're prepared to wait you can sometimes pick up a bargain.

Mailorder vs Retail Outlets

● This is largely a matter of personal preference and circumstances, many people in country areas have little choice but to buy through mailorder. If you can get to a store it can be worth your while. If you can't get to a store then you aren't necessarily destined to pay huge mark-ups. There are some excellent mailorder companies around who regularly charge less than the retail outlets. Many advertise in this magazine. The one thing which mailorder companies don't offer is sales, although they may occasionally offer special reductions.

When your state's biggest computer shop has its yearly sale, move heaven and earth to get there. Know your prices and make sure you have the plastic ready, you can save hundreds of dollars if you've been putting off your big purchases for this moment. Be careful however, what you're looking for may not always be available during sales and it's a good idea to get in early in case stock runs short.

Can I Trust Mailorder Firms?

● I've never had any trouble but you may have had a bad experience. It's a good idea to buy from firms which have been in business for a while, ones with a reputation to protect. Although like any business, these can fold overnight just as easily as a new operation.

If you are trying a new company make your first purchase a small one, perhaps under $30. This will place you at a minimum of risk and let you know something about the speed with which they process orders. Don't always assume that big is best. One large company regularly charges $10 or more over the RRP for mailorder as well as charging for postage and handling. Some of the smaller companies consistently charge less than recommended retail and they often deliver the goods free, so the price you pay is that which appears in the ad. On top of this they may have a toll free phone number or a freepost address or both. Every cent counts.

A lot of this may seem like common sense, however it's amazing how mindless we can be when we're impatient to lay our hands on the latest software release. The best position you can be in when buying software is to be a little patient and as well informed as possible. If we stop making it so easy for retailers to get away with unreasonable pricing and stop breaking the law ourselves through software piracy perhaps the prices and the range of software available in this country will improve even further. ❑

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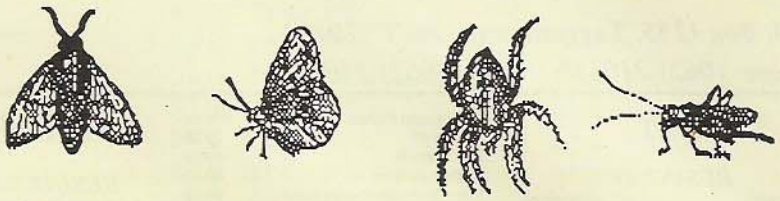

Here's a list of annoying bugs and hiccups placed on a BBS recently - these have been verified in version 1.2 of the Amiga operating system. Some of them may have been corrected since the release of Workbench 1.3 - please let us know if you have further information. The following article is only for programmers and advanced users.

Trackdisk

● *Sticking a disk in a drive, then changing your mind and pulling the disk back out, can severely confuse trackdisk. It will continue to step and notice disk insertion, however DOS will never find out about a disk placed in that drive until a re-boot. Timing is critical, but repeatable:- insert a new disk in, wait for the light to come on and the first 'grind' as the head steps to block 880. Pull the disk out before it gets there. If you get a 'disk corrupt' requester you waited too long. Repeat, varying timing until the CLI 'info' command locks up when getting the status of the 'dead' drive.*

This can also happen if your finger slips on the button while removing a disk, and that, in fact, is how I noticed this bug.

ED

● **Type "fish". Press and hold the "-" key until the message "Line Too Long"comes up. Now type <CTRL><]> (control-bracket). 'Poof', the line disappears. Now cursor up to the "h" in "fish" and hold the "-" key until the "Line Too Long" message comes up. Save to disk with <ESC>,<X> (escape then "x"). Ed has now crashed.**

DOS

● Calling Delay(0), or WaitForChar (blah, 0) (any DOS call which takes a timeout and setting that timeout to 0) intermittently crashes the Amiga. (Test program: for(;;) Delay(0);). DOS devices such as RAM: or PIPE: that are meant to have a single invocation/filehandle for multiple users have a problem. If two programs attempt to reference the same DOS device simultaneously and DOS must load it from disk, the window is sufficiently large to cause separate invocations of the driver (instead of just one) for each program causing all sorts of problems.

The DOS driver must set a field when it starts up to cause DOS not to make separate invocations. Rightly, this should be a bit or field in the Mountlist.

Suggestion:- BCPL programs link weird, and an exec() function should be provided that will allow alternate CLI programs to function without major structural fondling, compromises or kludges. The current DOS execute() does not qualify. (Requested by several programmers)

Suggestion:- Rather than have empty drives 'click' every three seconds simply reset the DISKCHANGE* latch by stepping outward repeatedly. The optical stop is there, it reduces noise, wear on the mechanism and the sample rate can be upped without driving people batty.

Suggestion:- Preference item to enable/disable a requester warning when a file is about to be overwritten. Must be software setable so programs with such protection already installed will not cause the user to be asked twice.

Exec/Intuition

● *Disk insertion should NOT <RETRY> a 'software error - task held' requester. Alerts display the text message in the system font, NOT a hard coded ROM font. If the default system font has been changed to a RAM based font and if that becomes trashed, the alert will be unreadable.*

Not a bug, but a survivability concern. The Alt-Amiga combinations are not accepted when alerts want a mouse buttonpress.

Intuition

● **I have a tool that opens a window on the Workbench screen. It works perfectly. I wished to speed up text writes to this window so I set the rp Mask field to $1, this too worked fine - that is until I depth arranged the window and it started dropping bitplanes all over the place. $FE,$FD provided the same results. I was shocked, one would think that Intuition would have its own idea about rp Mask. My tool now does things the old way, monochrome text written into two bitplanes when the second plane is already at a known state.**

What a hassle! For monochrome text the proper approach should be to clear/set all planes of the text area, and write the text into only one of them. Common sense. Place a window in the center of the screen and start a window resize. Hit Left Amiga-N or M. Continue the resize PAST the top left corner of the window. When the system is nearly out of memory menus can still be pulled down, but the actual graphics will not be drawn.

Why not calculate and reserve the proper maximum amount of memory needed at the time a new strip is submitted to Intuition. One memory pool will serve all menus, since only one menu and one sub can be pulled at a time.

Intuition should skip ahead to the latest mouse position report after pulling down a menu, rather than responding to each in turn.

Workbench Bugs

● Type 'LoadWB' after hanging around in the CLI for a while. Workbench will ask for each know volume in turn. <CANCEL> will not convince the Workbench to give up asking for a disk that may be long gone - lost or formatted, copied over or even relabeled. Either the <CANCEL> option should not be selectable, or it should cause WB to ignore that disk/lock until it shows up on its own accord.

Dropping a dragged icon at EXACTLY the right time, into the space where a new disk icon is ABOUT to appear will cause that icon to 'stick' to the pointer even after the button is released. Moving the pointer to the title bar and clicking crashes the machine. V1.0,V1.1 & V1.2 repeatable. < Vigorous resizing of WB windows will trash the 'Gas gauge'

Corrupt .info files can crash the Workbench tool. Sample 'killericon.info' available on request. If Workbench is not already doing it, these steps should be taken:-

● RENAME instead of COPY if the source and destination locks refer to the same volume.

● When updating the '.info' file, if no

Continued on page 48

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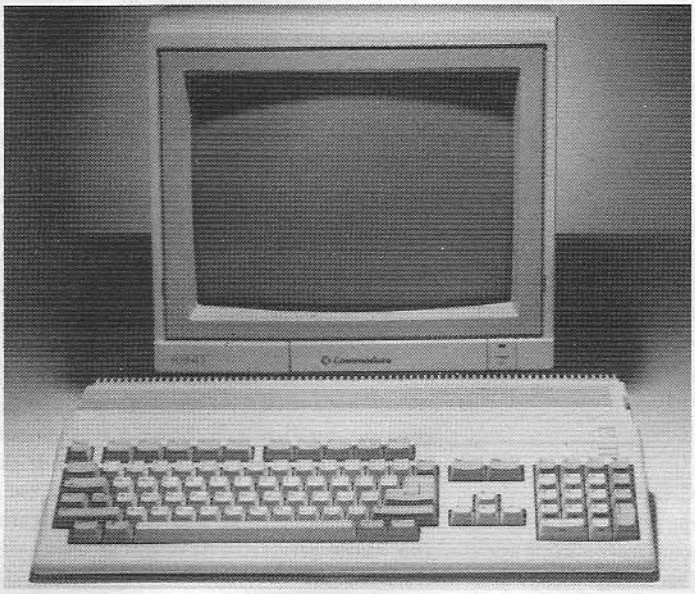

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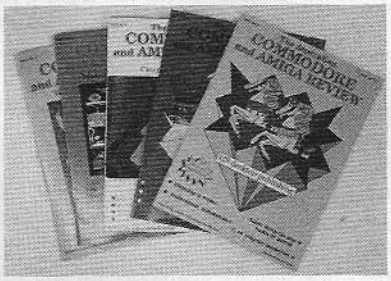

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substantive changes are needed update the datestamp with a seek, rather than with a new file.

● When 'snapshoting' a '.info' file seek to the position variables and modify them in place, rather than creating a new file.

V1.2 RAM: Bugs

● *Create an empty file. Delete it. The block count will be incorrect. COPY * TO FISH, <CTRL><\>, DELETE FISH, repeat, INFO. Block counts such as -3 are easy to create.*

Related:- if the first copy that sets up the RAM: fails due to lack of memory the block count will be similarly screwed. Rename allows duplicate file names. Create files 'fish' & 'frog' rename one to match the name of the other.

Font editor

● **Select 'OPEN' from the menu. While the editor is reading in the font names, move the 'ZOOM' gadget. Crash.**

DOS related requesters belonging to the font editor appear in the Workbench screen, not the font editor screen. Set the pr WindowPtr in the DOS process structure.

EMACS Bugs

● In EMACS, select SAVE AS with mouse. Save a long file to floppy. While it is grinding away, select SAVE AS again and type another filename. EMACS does not like this, and will become upset.

The justify function (^X^J) is broken. Crashes always. The 'ENTER' key does not function properly when inputing on the bottom line. StripA (From Toolkit) strips extra symbol hunks from executables. Files often do not work after the treatment. Example:- the notepad.

User interface

● *The input device/Intuition does not track pointer movement during such operations such as window resize. This 'feels' sloppy. Some hyper-highpriority task should keep the pointer visuals intact, even if Intuition is stomping on the input.device task. In cases where <RETRY> or <CANCEL> on a requester is NOT a valid operation, the gadget should not be present, or selectable. Example: <RETRY> on most 'task held' requesters. <CANCEL> should <CANCEL> period. None of this asking twice stuff.*

'Desk' accessory menu to help combat clutter on the Workbench screen would be great. Direct support for moving windows from one compatible screen to another.

Documentation

● **The examples in Intuition manual encourage limiting window growth to 640 x 200 PAL, interlace and more rows freaks hate this. The manuals should encourage no limits if none are required. Many, many people miss setting the NOCAREREFRESH flag in their SMART REFRESH windows, thus causing extra refreshes forever after a window resize.** ❑

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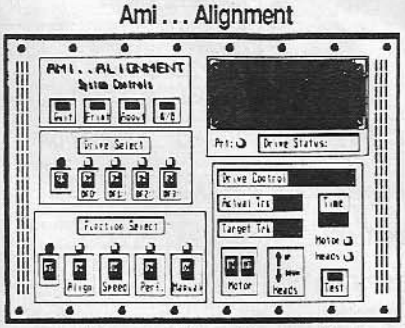

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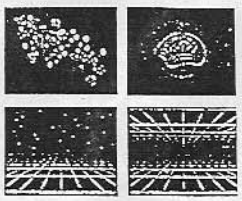

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Convert your NTSC C64

and Technical Tips - from Jamie Grahame

To convert from PAL to NTSC:

a) C64

Change crystal Y1 from 17.734472 MHZ to 14.31818 MHZ.
Change VIC Chip Type No 6569 to 6567 (v19).
Change jumper E2 to E3.
New power supply.
Change C70 from 15 pF to 16 pF.
Change R52 from 330r to 680r
U17 may need to be changed to 906114-ø1

b) C64 B

Change crystal as above.
Change VIC chip as above.
Change jumper (probably open the track).
New power supply.

c) C64 B/3 [2 Ram Chips, 3 Ram Chips]

As above (C64B)
Open jumper J2 (cut track).

d) C64 BN/E [2 Ram, 2 Ram Chips, Short Board]

As for C64B
Open jumper J3 (cut track)

e) C128

Change Y2 crystal as for C64B.
Change VIC chip from 8566 to 8564.
Open jumper J1 (cut track).

At this time I don't have all information on the C64C short board (see C64 BN/E).

Technical Tips

● If you have a VIC 1541 disk drive, always turn drive on first, then the computer. This is so the reset from the computer gets the attention from the drive and it resets correctly.

● Can't read from or write to 1541 type drive. Power's on okay and reset's okay when computer turned on. Swap the two 6522s over and drive should continually run when switched on. Faulty 6522 so get it replaced.

● IF YOU TAKE A CHIP OUT PUT IT BACK THE SAME WAY or when someone applies power the chip will blow up. (As a friend of mine says "Once the smoke comes out it won't work any more because you can't put smoke back in."

● C64C - no sound. Replace fuse in the C54. This is not quite as easy as it sounds as the computer must be dismantled to get to the fuse.

● Cassette Problems. Firstly ensure that the cassette unit is not at fault.

a) Can't read from tape. Faulty 6526 (v1). This can usually be checked by swapping V1 and V2, then try if okay, and you don't need to use the Flat at the user port (Pin B), then leave else replace 6526.

b)Can't write to tape, tape won't start, tape not present. Replace MPV (6510) V7 on most boards.

● Keys not working from keyboard. Replace 6526 (v1).

Keys sometimes work. Pull keyboard apart and clean board with eraser thoroughly then follow with metho unless you have the carbon (black) pad board. If so just clean board with metho. Clean the rear of all keys with methoensuring you don't use too much pressure. ❑

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Animation

Terrain - the Landscape Generator for Turbo Silver

by Dennis Nicholson

IN A NUTSHELL *Terrain* produces mountains, valleys, rivers, hills, canyons and water that can then be used in the *Turbo Silver* ray tracing animation package. I wouldn't go as far as saying *Terrain* is "God on a disk" but the program is capable of creating endless landscape formations. Though some input is required from the computer user to manufacture such natural wonders!

There are two versions of *Terrain* on the disk. *Terrain* and *Terrain FP*. The latter only runs on an Amiga fitted with the 68020/6881 co-processor chips, and will guru a standard machine. *Terrain* does not use fractals to manufacture its images, but relies on randomly generated triangle patterns. This is because the number of triangles needed to do fractal based mapping is much higher and the byte size of images would be gigantic. One megabyte Amigas would have to grow into nine megabyte Amigas.

So let's go mountain climbing

● Base camp:

Clicking on the *Terrain* icon brings up the work area. Opening the **Project** menu and selecting **New** is the only way to get the program up and running. **New** brings up the **Terrain size** requestor where you can select the size and number of triangles to be used. From there it is all downhill...err...uphill!

Making a mountain out of a mole hill - or alps to know what you are doing! The first thing to be seen in the work area is the **Camera**. It's the circle with a small straight line protruding out from it. The line is the "lens" of the camera. So wherever the line is pointing is the direction you ("cameraperson") are looking. **The Set F** command lets you raise or lower the angle of the camera. By selecting **Add Peak** you can place a large cross-hair on the screen, yes a mountain. If it is coloured blue it is telling you that it is still active. (Mount Vesuvius without the lava problems!)

When an object (camera, peak, valley or whatever) is active it can be moved, rotated, copied or deleted. Selecting **Size X**, **Size** Y or **Size XY** allows you to alter the length of **X** and **Y**, and thus increase or decrease the width of the peak. **Size** Z adjusts the height, if the Z number is minus the mountain becomes an instant valley. The **INFO** command brings up the **Peak Parameters** requestor. This gives you the information on your currently selected object. By clicking on **Show** you are giving a sine wave representation of the peak/valley.

The hills are alive with the sound of music...

● After placing, changing, scaling, sizing and setting your objects you can have a look at what the three dimensional version will be like. *Terrain* has three view modes - **Wireframe**, **Polygon** (removes hidden lines) and **Filled** (with a colour of your choosing).

Terrain can become rather boring as a stand-alone program, and it's not really designed to be used in that way. One of its pull-down menus is titled **Silver**. It contains two sub-menus, **Save Cell** and **Save Object**. If you save your image as a **Cell** it can then be imported into *Turbo Silver*, Impulse's ray-tracing program. It is then possible to begin a ray-trace using the cell image as a background. This gives you the advantage of at least knowing what background you have before a time consuming trace is completed. If you use a *Terrain* image in *Turbosilver* and you wish to set a different camera parameter, or alter the lighting on the image you will have to save it as an **Object**. Saving it as an **Object** does not save the camera light source information from the original *Terrain* creation.

Doing the mountain rap!

● Have you ever had the compulsion to wrap a mountain with tissue paper, or dollar notes, or strawberry-flavoured ice cream? Just asking ... some people have done some strange things in the past. I'm a little more conservative, I would wrap it in vanilla ice cream! I just happen to have a digitized image of vanilla ice cream stored on my hard drive and I want to wrap it around my mountain. What's so unusual about that? The *Terrain* software writers have written such a facility into the program (though they didn't specifically mention ice cream).

Prior to saving a *Terrain* image as a **Cell** to be used in *Turbo Silver* a special save requestor, titled **IFF Save**, is activated. This allows you to select a pre-drawn image, or digitized picture, and have it "wrapped" around a mountain on your **Terrain Cell** as it is saved. You will not see the results until you enter *Turbo Silver* and begin ray-tracing. Then it's just a matter of putting a glazed cherry on top!

Parting the red, blue and green sea

● So your mountain has turned into a glacier and you have water everywhere (no I'm not going to mention the obvious! ... and not a drop to drink!) The WAVES sub-menu lets you create wave terrains. It is possible to save the waves as a series of cells that can be animated in *Turbo Silver*. As with mountains, it is possible to "wrap" (lay) an image onto the wave surface.

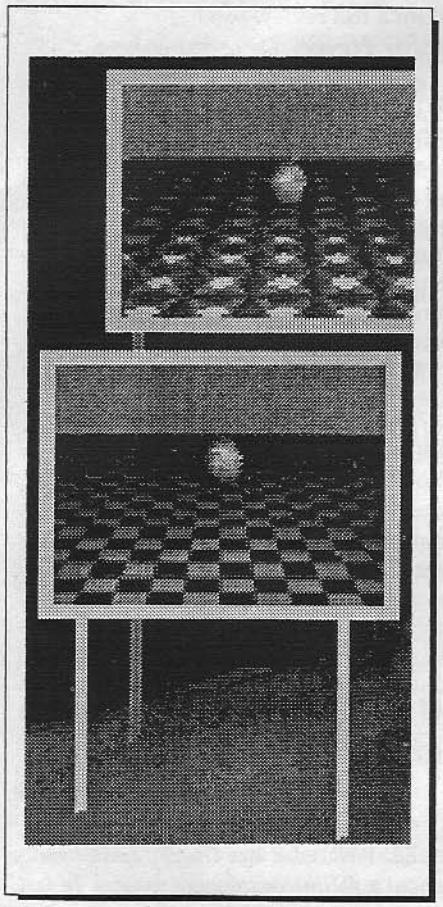
Grounded!

● Four ground types are supplied with *Terrain*, checkerboard, tile, octagon and flower patterns. These are objects to be used within *Turbo Silver*.

Have your ray-traced images been grounded lately by the lack of your creative juices flowing? Well it's time you came back down to earth and planted your feet squarely on terra firma! Why not rock down and see your Amiga dealer? Land some of those hard-earned dollars from your bank account on the Coun-

ter And Grab *Terrain!* I'm Shore it will get your ray-tracing coasting along in no time at all! ❑

Terrain by Impulse Inc. 6870 Shingle Creek Parkway. Suite No: 112. Minneapolis. Minnesota. 55430 USA. Phone: (612) 566 0221.



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The Mega Entertainment Section

Edited by Phil Campbell

That's Entertainment

A round-up of this month's entertainment news and views.

Who's where?

● In an interesting sequel to last month's item on the Questor/ Ozisoft merger, Ozisoft have moved house. They now occupy offices in the same building as Questor, a little further from the heart of Sydney. By the time you read this, they should be nicely settled - and that means they will start letting us know a bit more about their new products.

New products on the way from Mindscape

● Mindscape have mapped out a release schedule for over 30 new titles between now and Christmas. We'll be reviewing the best of the crop as usual. Most exciting - judging by the title alone - will be TV SPORTS BASKETBALL, sequel to the incredibly successful TV SPORTS FOOTBALL. An Amiga version will be released first. Meanwhile, C-64 and IBM users will finally get to play the FOOTBALL version at about the same time. Look for both titles in November.

Microprose pours forth

● Microprose, once famous for producing incredibly complex simulation games, have widened their scope - mostly by buying out a number of other companies. Look out for *Rick Dangerous*, reviewed in this issue - an action packed vertically scrolling platform style game. Also on the possible hit list are *3-D Pool*, which includes a unique "move around the table" feature which allows shots to be played from any position. The Microprose range - including the classy MicroStatus label - is distributed in Australia by Questor.

Game with a conscience

● Questor are about to release *Rainbow Warrior*, a game based on the adventures of the ill-fated Greenpeace vessel of the same name. Fight pollution, conserve the environment and stop nuclear war - quite a challenge, and a pleasant change from blasting everything in sight. Watch out for a full review soon.

New from Pactronics

● *Chariots of Wrath* is the latest release from Impressions (UK). It is said to take arcade games into the next generation, combining arcade action with the depth and challenge usually only offered by adventure or strategy games. *Chariots of Wrath* gives you more: more action, more destructive weaponry, more variety, more traps, more aliens, more monsters, more surprises and more excitment.

● In *Search for the Titanic*, you join in an authentic simulation of the search for the Titanic. You begin as an experienced oceanographer. You must build not only your experience, but also your reputation as you have to attract commercial sponsorship. *Search for the Titanic* includes over 75 wrecks to explore, more than 100 navigational maps and charts and 47 ports of call. Realistic weather patterns and currents, sophisticated sonar, magnetometers, underwater cameras, mini-subs and bathyspheres. ❑

Letters to the editor

High scores

● I have enclosed some cheats and tips for Amiga games, plus a couple of high scores for your Amiga Hall of Fame. I hope that they are of some use to you in your excellent magazine.

Ian Malcolm,
Noble Park, VIC

Ed: Thanks Ian. You'll find your contributions scattered around these pages. By the way, you didn't have to say it's an "excellent magazine", but if you insist ...

Shoot-em-ups

● For your computer magazine I have especially compiled a guide for "shoot-em-up" games on the Commodore 64. I have been working on this for a few weeks and I hope you are pleased in the end result and hopefully will print it in your mag. I don't think a guide like this has been in your magazine before and would come as a nice change with the decline of the software reviews being present in your magazine lately. No offence.

Luke Lynde,
Zillmere, Qld

Ed: Well, what can I say? I hadn't really noticed a decline in software reviews. In fact, I thought it was just the opposite - especially over the last couple of issues. Maybe other readers would like to comment. The "guide to shoot-em-ups" is a good idea. Unfortunately, Luke hammered it out on an antique typewriter, without even double spacing. Submissions are usually only accepted by modem, or on disk; it's probably a good idea to get in touch with us before you spend too much time working on submissions. ❑

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Amiga Hints and tips

HINTS AND TIPS keep flowing in at an alarming rate! Thanks to all our readers who have contributed. Please make sure you mention whether your hint applies to the Amiga or Commodore 64 version of the game.

This month we've got a heap of handy "code words" for you to try - Ian Malcolm of Noble Park sent the following.

International Karate +

● Type the following codes for a bit of extra entertainment while playing the game.

PAC makes the little Pac-Man appear
BIRD does the same with the bird.
PERI brings up the periscope.
FISH - have a guess.
FREZ freezes the game.

Cybernoid

● Typing RAISTLIN on the title screen gives infinite lives

Michael Middleton, of Dareton, NSW, offers the following gems ...

Double Dragon

● In two player mode get both players killed off until you have one credit left and the "continue" message is displayed on both sides of the screen. Press both fire buttons simultaneously and you should have infinite lives.

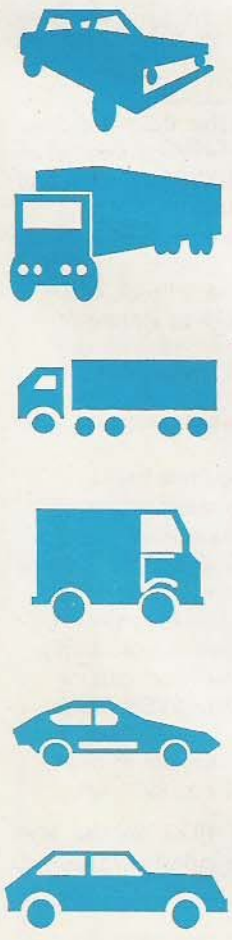
Also, if you type R U CALLING MY PINT A POFF! on the title screen and press return, you should be able to kill your opponent by pressing the DELETE key.

Exolon

● Type "ad astra" (in lower case) while on the high score table to get infinite lives.

Afterburner

● During play, hit backspace to



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High Scores

Amiga

- Arkanoid - 466,190 G Smyth
- Bubble Bobble - 1,009,000 M Scanlan
- Denaris - 53,900 M Middleton
- Dragon Ninja - 105,030 R Zagami
- Double Dragon - 116,204 R Zagami
- Hybris - 749,680 M Webster
- ISS - 1,420,450 G Smyth
- Karate Kid II - 41,336 O Webster
- Leatherneck - 83,300 O Webster
- Major Motion - 50,658 O Webster
- Mindwalker - 306,214 P Schumacher
- Mousetrap - 10,120 C Webster
- Operation Wolf - 344,800 M Middleton
- Outrun - 3,053,976 R Zagami
- Offshore Warrior - 626,345 J Booth
- Pacmania - 556,280 I Malcolm
- Pow - 106,065 R Zagami
- Sidewinder - 385,800 I Malcolm
- Speedball - 10,335 GS and PS
- Starwars - 2,296,786 I Malcolm
- Test Drive - 96,841 M Scanlan
- Typhoon - 54,255 O Webster
- Whirligig - 7,428 J Scowen

Commodore 64

- Bangkok Knights - 36,800 N V Heeswyk
- INT. Karate - 113,700 N V Heeswyk
- Handball Maradona - Level M N V Heeswyk
- R-Type - 548,310 N V Heeswyk
- Robocop - 82,250 T Lockwood

pause the game and type in AGES (Sega spelled backwards, of course) causing the game to restart. Use the " " and " " keys to change levels. Simply fly to the top left hand corner of the screen to avoid incoming missiles and planes. Increase speed to full to avoid infra-red missiles coming from behind. Decrease speed on levels eight and 17 to avoid the rocks.

Flying Shark

● On the high score table enter the initials of one of the programmers while holding down the "5" key on the keypad as you enter the last letter -

RAB - invulnerability
KDJ - infinite lives
JGL - super shots
RLH - shooting 'smile'
HSC - screen will go black

Thanks, Michael. We'll print the rest of your hints next month.

Next, we've got a hot tip for *Elite* fans, submitted by Paul Millward of Salisbury North, South Australia.

"To enter cheat mode in the Amiga version of *Elite*, type in "SARA" when you are asked for the password, followed by the correct code. Start the game and press "*" on the numeric keypad; the "hack screen" comes up, allowing you to change values and add items to your inventory."

Paul follows with a huge list of "item codes", which we haven't got room to print in full. Here are some samples -

Number	Value	Item
23	02	Large cargo bay
28	01	Beam Laser
32	01	Docking computer
34	03	Galactic Hyperdrive

Try them out, and if there are enough complaining letters, we might even print the complete list next time.

Bombuzal

● Here are most of the codes you will need, together with the level they will take you to ...

8 - ROSS
16 - RATT
24 - LISA
28 - SINK
32 - DAVE
36 - BIKE
40 - IRON
44 - BIRD
48 - LEAD
52 - TAPE
56 - WEED
60 - VASE
64 - RING
68 - PILL
72 - GIRL
76 - SPOT
80 - GOLD
84 - PALM
88 - OPAL
92 - LOCK
96 - SONG
100 - SAFE
104 - WORM
112 - LAMP

Thanks, Malcolm. Now, how about a little competition? Try putting all the *Bombuzal* code words into a short story - in order, of course. We'll send a C-64 or Amiga game to the shortest, most entertaining entry. Make sure you specify what kind of computer you've got, and send your effort to Phil Campbell, PO BOX 23, Maclean NSW 2463. Who knows? We might even print the best one. ❑

Commodore 64 hints and tips

● Nick Van Heeswyk of Mt. Gambier, South Australia, has sent the following C-64 hints.

Kung-fu master

● Load the game, then reset. Enter POKE 34142, 128 followed by RETURN, then type SYS 32768 to restart the game. You now have endless lives.

Monty on the Run

● The password sequence for this game is as follows -

ROPE-JETPACK-PASSPORT-GASMASK AND THE BOTTLE OF RUM

Ghostbusters

● When you are asked for your name, type OWEN. For your account, type LIST. This will give you plenty of spending money.

RYGAR

● Load the game, press reset, then enter the following -

POKE 9551,165:
POKE 4050,77:
POKE 4055,77

Press RETURN, then restart the game by typing SYS 2325. You now have unlimited lives.

Netherworld

● Press 2, 4 and E all at once to enter the next pattern.

to disable sprite collisions in R-TYPE ...

```
10 FOR I 384 TO 412: READ A: POKE
I,A: NEXT
20 SYS 384
30 DATA 32, 86, 245, 169, 114, 141, 110, 8,
169
40 DATA 1, 141, 111, 8, 76, 14, 8, 169, 173,
141, 157,50
50 DATA 169, 96, 141, 156, 49, 76, 18, 8
```

After typing in the following program, first save it on a spare tape. Then RUN it, put in the R-TYPE cassette, and press the PLAY button.

Finally, Tony Sharpe of Cessnock, NSW, provides the following goodies. The first is for IO, which I reckon is one of the best shoot-em-ups of all time ...

IO

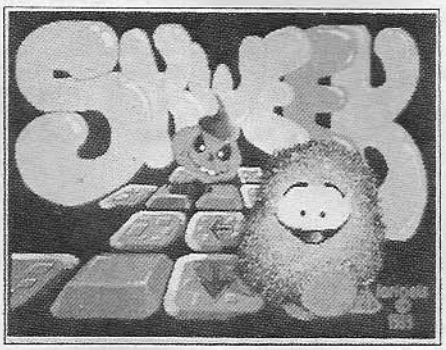
● First, load the program and reset the computer. Then;

POKE 25117, 173 for infinite lives
POKE 24969 with a number between 0 and 3 to set the starting level
POKE 27026, 0: POKE 27027, 173 to make your ship invincible
POKE 25080, 173 lets you keep the firepower you've earned, even if your ship gets destroyed.
To restart the game, type SYS 24576 followed by RETURN.

Ace II

● Enter DUSTY BUG on the high score table to become indestructable. ❑

SKWEEK



Worried about violence in computer games? Want a game that even your mum will enjoy? Then read on - Phil Campbell has found a game that's "skweeky clean", and good fun as well!

I DON'T WANT to sound sexist. I certainly would not want you to think I am a male chauvinist porker. And the last thing I want is a batch of angry letters from the Anti-Discrimination Board. But facts are facts. And the fact is, most non-male persons are not usually interested in computer games. Especially violent and aggressive computer games where the sole aim is to reduce everything on the screen to ash. Somehow, non-male persons - let's call them "women" for the sake of convenience - are just not interested.

From time to time, though, a game appears which cuts across these traditional gender boundaries. A game with universal appeal. It happened with *Pac-man*. It happened again with *Pingo*, a game featuring a cute looking penguin pushing ice-cubes around the screen and avoiding a tribe of deadly "Snobies". These games typically share two features. They are relatively non-violent, and they feature cute little creatures running around the screen.

Skweek, just released by French software house Loriciels, follows precisely in this tradition. In fact, new heights have been scaled in the "cute little creatures" department. I doubt that anyone will ever top the fuzzy orange thing that runs smiling around the blue-tiled screen. This little guy exudes cuteness from every fibre of his being. Sickening, I know. And it gets worse.

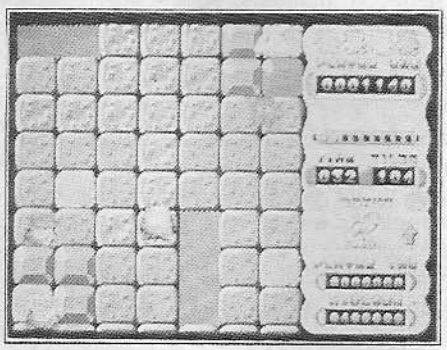
The aim of the game is to run over all the blue tiles and paint them pink. Naturally, there are all sorts of little nasties trying to stop you - but in this game, even the nasties are cute. There are blue turnip-creatures with big eyes and green hair. There are sheet-covered ghosts with appealing smiles. There are spikey headed characters with innocent eyes. And all of them are unbearably cute, but if you bump into them they explode. You, of course, explode with them, so the only thing to do is shoot them with your fireballs before they get too close - I did say "relatively" non-violent. And at least they die happy. You can tell by the cute little looks on their faces.

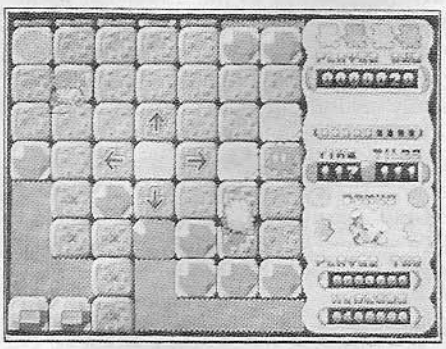
There is more. A lot more. Like the random bonuses that pop up on the screen. Ice Cream cones for extra strength, Running Shoes for extra speed, and little gift wrapped presents with mystery bonuses inside. And - before I forget - there are even some pastel coloured teddy bears for you to collect. I'm not sure what they do, but they sure are cute.

A game of this calibre would not be complete without a soundtrack. Music and sound effects are very important in creating atmosphere and tension. In this case, the background tune sounds remarkably like the theme from "Skippy." Sound effects are limited but timely - whooshes, splats and bangs in all the right places. The overall effect is ... well ... cute.

What else can I say? By my calculations I have already used the word "cute" ten times, and I have been desperately trying to avoid it. But what else can you say about a game that wants you to paint everything pink while you pick up ice cream cones and lost teddy bears? Anyway, that's why your mum and your girlfriend will love it. In fact, I'd almost guarantee that guys will enjoy it as well. *Skweek* is an incredibly addictive game. I can't get past level five - partly, of course, because my wife will not give me another turn.

Skweek is distributed in Australia by Pactronics (ph 02 407 0261). At this stage, there is only an Amiga version, which sells for $49.95, but you can get it in any colour you like. As long as it's pink. ❑



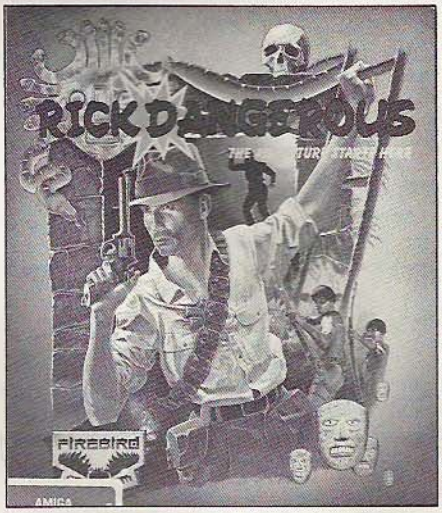


AMIGA

Review copy from Pactronics (02) 407 0261. RRP Amiga $49.95, PC $49.95.

Rick Dangerous

by Phil Campbell



RICK DANGEROUS is cool. Rick Dangerous has lightning reflexes and a ready trigger finger. Rick Dangerous doesn't know the meaning of fear. Rick Dangerous makes Indiana Jones look like a wimp - forget *The Temple of Doom*. Ignore *The Last Crusade*. Trade your movie tickets for a copy of *Rick Dangerous - The Adventure Starts Here*, and join in the action. Programmed by Microprose, a software house most famous for their incredibly complex simulations with 90 page instruction manuals, *Rick Dangerous* is different.

This game is simple. Instead of a manual there is a colour comic strip. Sadly, it's only four pages long, but it sets the scene nicely for the game. Rick, drawn by cartoon ace Ian Gibson, survives a plane crash in the Amazon. Hacking his way through the jungle, he finds himself outside the ruins of an ancient Aztec Temple. He steps through the door, and the game begins.

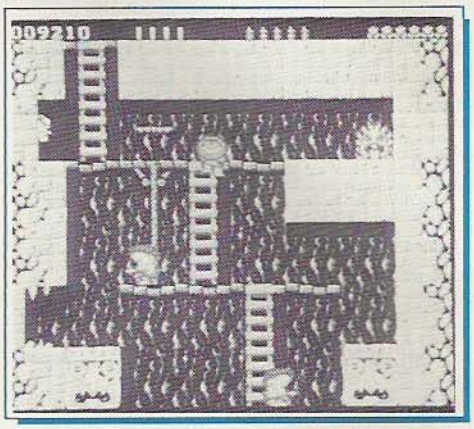
Your screen displays a series of tunnels, walls and ladders in cross section view. Rick stands in the upper left hand corner, ready for action. As soon as you touch your joystick, Rick springs to life - but so does a huge boulder lodged immediately behind him. Not a moment to lose - Rick must dive over the nearest ledge, race along a corridor, and drop down a narrow shaft to escape. Any hesitation will leave you feeling rather flat. This is a high adrenalin introduction; and it doesn't get any easier.

Moments later, Rick comes upon a network of ladders guarded by deadly Goolu warriors. One brush with these guys means instant death. They attack, and Rick responds with a blast from his shot-gun. Ideologically unsound, I know. He should have negotiated, but there just wasn't time.

Onwards. Tunnels, Goolus, deadly spikes protruding from all the wrong places - traps and hazards too numerous to mention. Each of them takes thought, timing and just a touch of raw talent.

Rick pauses to pick up a golden Aztec mask. A number of them are scattered around the corridors, and they are worth 500 points. In this case, however, Rick's only reward is a spring loaded spear in a painful place. Rick is dead. Rick starts again - from the top. Rick is very frustrated, but he keeps trying; after two or three hours, he is screaming and tearing out his hair. And this particular Rick Dangerous does not have too much hair to spare.

Rick Dangerous is a lot of fun. Infuriating. Dangerously addictive. But a lot of fun. Not that it is based on a particularly new concept - in fact, the gameplay has a lot in common with the ancient *Donkey Kong*, with the occasional touch of *Boulderdash*. But who cares?

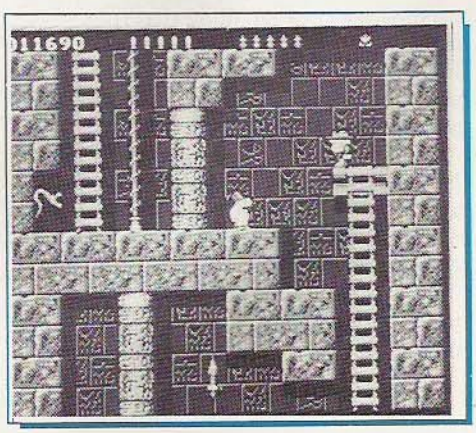


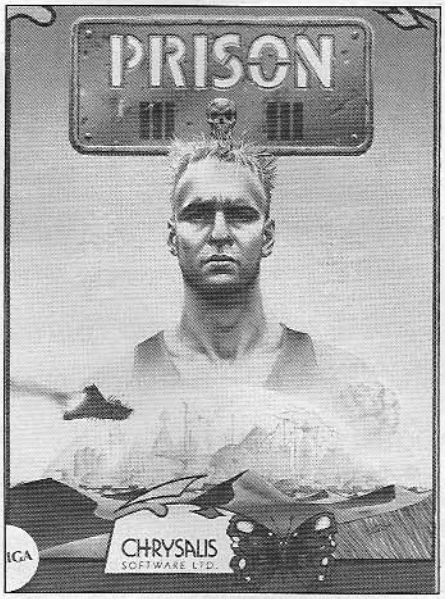
Graphics are nicely done, with plenty of detail and a touch of comical style. This is the only game I have ever seen with a "Black and White" option - designed to give the game an authentic 1940 adventure movie atmosphere. It worked; but I think I prefer Technicolor.

Sound effects alternated between a melodramatic musical score, pistol shots and spine tingling cries - all the "right stuff" for a game of this calibre.

All in all, *Rick Dangerous - the Adventure Starts Here* is hot stuff - action packed, well produced and absolutely impossible to turn off. I am stuck somewhere in the middle of the Aztec temple, with plenty of challenges ahead. In fact, if I get through, I will move on to the challenge of the pyramids, and then a final showdown with a bunch of bad guys. Don't hold your breath. ❑

Distributed by Questor, ph 02 662 7944, Atari ST and Amiga versions have a recommended retail price of $49.95. An IBM compatible version at the same price is expected soon, and the Commodore 64 disk version is bargain priced at $39.95.





by Luke Tattersall

JAG EDWARDS is a victim of circumstances, a casualty of corruption and injustice within the legal system of the day. Found guilty of a crime that he did not commit, he has been sentenced to live out his days on the penal colony of Altrax. Jag, however, intends to escape from Altrax and clear his name.

This is the background of *Prison*, a stylish new game from Chrysalis. It is an action/adventure game that really keeps you guessing at every turn - if it was a book you would say it was the sort you couldn't put down. There was a film a few years ago called *Escape From New York* (starring Donald Pleasence and Kurt Russell) - *Prison* is similar, if not in the actual story at least in the feel and atmosphere.

Jag Edwards is the character you control and his mission is to make his way around Altrax in search of an "Escape Pod" hidden somewhere on the planet. Along the way you have to collect items that are essential for your survival and will help you in your search for the escape pod. Some items you come across are of no use at all - other items, like an old neck tie and a plank of wood) seem useless at first, but as you progress you will realise the important part they play.

Graphics are very convincing. You actually feel like you are walking around with Jag. During the course of the game the hours tick by and night falls. Things become harder to see and the aliens come out in greater force. I actually breathed a sigh of relief when the sun began to came up again.

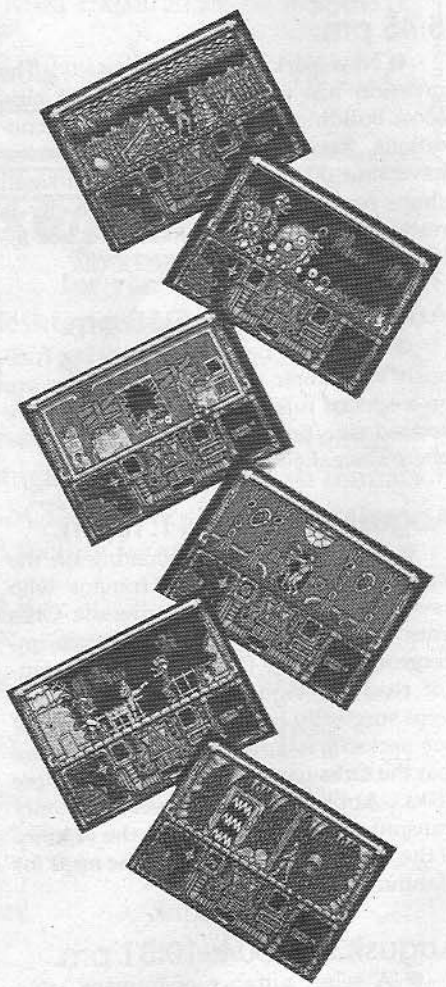
The top half of the screen shows Jag and the surrounding area and the bottom half shows your status. This section reveals such things as how many lives you have left, what you are carrying in your two pockets, and the elapsed time. The bottom window also offers an action menu - these options are used to make Jag search, pick up, or use objects. It is important to continually refer to the menu to make sure you don't miss anything. Sometimes the menu will offer you a choice of actions in a particular situation and one of them will be wrong, so be careful.

The game takes some time to load but the opening sound track makes the wait most enjoyable. It's a haunting, eerie piece of music that really sets the mood for the game - a pity it stops as soon as the actual game begins. The other sound effects are the walking noise made by Jag and the sound of the fights you have with the others on the planet. Probably the most terrifying noise is the one Jag makes when he is being choked to death by one of the aliens. (There are some other Sound FX: some music when you go into a deserted bar and some alien gibberish when you confront the stooge).

One great aspect of the game is that you can save your present game position. This means that next time you play you can pick it up exactly where you left off. This is great - it means that once you've made it through the easier sections you don't have to go through them again every time you play. Once a particular position is saved you can play the game as many times as you like from that position.

I must confess that *Prison* did not impress me much at first. But the more I played it the more exciting and challenging it became; and being able to pick up from where you left off means that it never really gets boring. In fact, it's getting better and better. ❑

Review copy from Mindscape International (02) 899 2277. RRP Amiga $49.95.



MANHUNTER New York™

What will the new century hold? Quite a few changes, according to Ken Simpson - if ***Manhunter*** *is any guide...*

August 27, 2004: 6 am.

● I am a manhunter. It's been two long, tedious years since the invasion. They came suddenly, like a thief in the night ... it was all over by dawn's first light. I have no idea how the rest of the world is doing ... outside communication has beeen suffocated.

5:45 pm.

● New York has been devastated. The invasion has taken its toll on the city. Most buildings are damaged. Living conditions have eroded. Most businesses have shut down; only a handful of small shops remain. Travel through the city is restricted, and most humans are not allowed out of their designated areas.

August 28, 2004: 5:15 pm.

● The Orbs have been working furiously since their arrival. It's like they are on a special mission of some sort. I have noticed significant changes in the atmosphere since their arrival.

August 30, 2004: 11:15pm.

● There are rumours floating on the street of a secret society. Humans who have banded together to drive the Orbs from New York. I hear they operate underground, where the tracking disks cannot read the signal. The tracking disks were surgically implanted in the backs of our necks. It is now common knowledge that the Orbs have had trouble with these disks. Apparently the disks can only transmit the location, but not the identity of the user as expected. Thus, the need for Manhunters.

August 31, 2004: 10:31 pm.

● A select number of humans were chosen by the Orbs to become Manhunters. I have no idea how the selection was made or how I was chosen. Tomorrow is my first day on the job ... and I have no clue as to my destiny. All they have told me is to read the "Manhunter's Field Guide" which they say will answer all of my questions ...

The "Manhunter's Field Guide" kindled my curiosity. I had delusions of being just like Harrison Ford in Blade Runner. I psyched myself up for the ruthless task ahead of me - to hunt down and kill my fellow human beings. Underneath my harsh treacherous exterior there was a noble motive. While tracking down humans for the Orb Alliance I intended to search for the human underground movement. With their help I would ultimately discover the true purpose behind the alien invasion - and stop it!

I was expecting this game to be a "winner". However, when the opening scene and credits came up on the screen I thought Sierra On-Line had just snatched defeat from the jaws of victory. But "never judge a game by its opening sequence". Even so, it is disappointing to see Commodore 64 graphics on an Amiga screen (especially when the sound is equally unimpressive).

Despite these initial impressions the overall game concept still had me intrigued. The game was written and designed by Dave & Barry Murray and I've enjoyed their work in the past. However, the lack of graphics quality in a 3D adventure game is glaringly obvious. This is the cost of porting games from lesser machines or trying to fit everything onto a single disk.

The "Manhunter's Field Guide" also contained a "walk-thru". A guide to the opening stages of play was helpful and quickly gave a good feel for the game. Suddenly you're on your own, depending on *Manhunter's* object oriented interface and a map of New York. In no time at all I was lost in the sewer. I had seen enough clues on the way to help me out of this situation. But I kicked myself for not taking more notice of them at the time. In fact, it was next day that the pieces fell into place and I realized that I could get out. I like a game that leaves your sub-conscious wondering. I couldn't wait to get home to see if my suspicions were correct.

As well as detective work, *Manhunter* requires you to master some co-ordination skills. These seem tedious and trivial at the time, but you'll find them an asset as you go on. And even when you do botch things up *Manhunter* gives you another try. Personally I'm into this "saving humanity" bit and the challenge is a little addictive. I couldn't play it everyday, but I'll come back to it.

Manhunter is a mixed bag - an exciting concept, let down by second rate graphics. Then again, it's only a couple of years ago that adventure games had no graphics at all. Like all Sierra products, this one is brilliantly packaged and documented. It's a game with real depth - it's just a shame about the graphics. ❑

Review copy from Ozisoft (02) 313 64444. RRP Amiga $ 61.95.

SimCity

Could this be the game of the year? Phil Campbell follows in the footsteps of Mayor Clint Eastwood, and finds that running a city can be darn good fun.

TODAY I AM the mayor of a small rural village. For a macho, laser totin' exspace ace like myself, this is quite a change. Gone are the split second reflex actions. Gone is the satisfying roar of an enemy ship exploding into a cloud of space-vapour. I have settled into a life of middle-class obscurity. I am playing *Simcity*. And I'm hooked.

Simcity is an absolutely brilliant piece of computer software. It is more than a game - it is a simulated city. A living, breathing city, with traffic on the roads, with miniature houses and shops and factories. And best of all, I am in charge. I am the mayor, I am the town planner - I am the guy who approves development applications. And there is no Independent Commission Against Corruption looking over my shoulder.

Which means, quite simply, that I can do whatever I choose with my simulated city. First, I can give it a name. "Philsville" has a pleasant ring to it. Or perhaps "Campbelltown?" In a few moments, my computer has generated an aerial view of the local area. Fertile plains, a rolling river - the perfect location for a bustling metropolis.

I decide to build my city from the ground up. I could have chosen to control a ready made version of Tokyo or San Francisco for a few decades, but I reckon there's nothing quite like that satisfying feeling that you made it yourself.

First, then, a few roads. I click on the "Roadworks" icon with my mouse, and move the pointer onto the main display. Roadways, complete with linemarking, are painted onto the screen as I move the pointer. This is easy - but at $10.00 a click, I need to keep an eye on my budget. Anything ambitious will have to wait until we attract a few more tax-payers.

Next, some residential zones. The method is the same; click on the icon, then on the main display. I arrange two blocks, one on either side of the main street. A commercial zone and an industrial zone complete stage one of the development.

Nothing will happen, however, until we connect the power supply. And before we can do that, we need a power station. I place it strategically, and lay cables to each block - point and click, just like building a road.

As the final connection is made, Philsville springs into life. Houses pop up like mushrooms, factories and shopping centres begin to appear in the industrial and commercial zones and tiny cars move back and forth on the streets. And this is just the beginning.

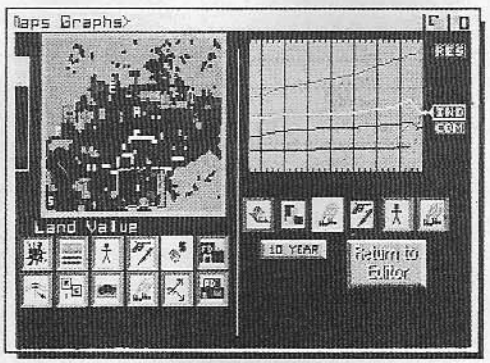
Planning is essential for good results. A special window displays maps and graphs with detailed demographic data - these help you to make strategic decisions. Perhaps you need a police station? Simply set the city map to display crime rates; "hot zones" appear in yellow and white, safe areas are shown in blue. Move back to the main display, and set up a police station wherever it is needed most.

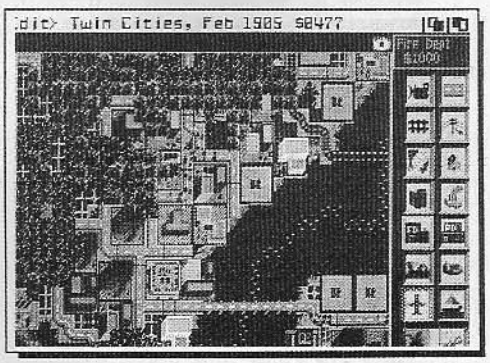
There are 12 map displays in all, from Traffic and Population Densities to Land values. Together with a series of graphs showing trends over time, they give you enough raw data to design exactly the city you want.

On the Amiga version, graphics are beautiful. A rich colour scheme brings the intricate details of the city to life. Screenshots of the Macintosh version look equally impressive. There are sound effects too, including digitised reports from the traffic helicopter. But that has to wait until you build an airport.

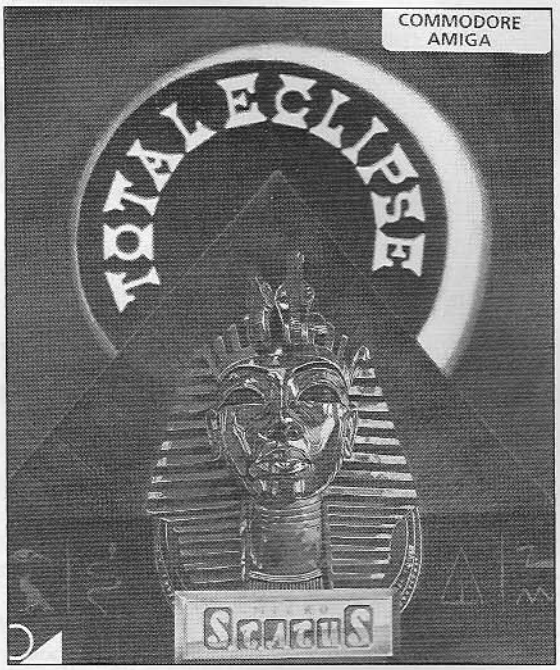
Simcity is simply a stunning game. My Amiga has been running for days at a time - Philsville has grown from a village of 800 people to a smallish city of 30,000. There have been some hard times - floods, fires and airline disasters - but we keep on bouncing back. After all, the people of Philsville love me. The last opinion poll gave me an approval rating of 83% - probably because I lowered the tax rate to 2%. Now that's my kind of city. ❑

Distributed in Australia by Dataflow (ph 02 331 6153), *Simcity* is well in the running for my Game of the Year award - at $69.95 for the Amiga and $49.95 for the Commodore 64, this game is an essential addition to your software collection. Even if you have to sell off your trainset to afford it.





Total Eclipse



Phil Campbell sets out on an Egyptian adventure, and discovers that saving the world can be hard work ...

MY HEART pounds as I enter the chamber of Nephthys. There is only one hour left. Only an hour until the moon moves in front of the sun, triggering an ancient Egyptian curse. Only an hour until the world is utterly destroyed. No wonder I feel a little tense.

My task sounded simple at first. All I had to do was make my way through the pyramid, find the Temple of the Sun God, and solve a simple puzzle. Success promised wealth beyond my wildest dreams. Failure? Large scale fireworks, just as soon as the sun and the moon are aligned in a total eclipse.

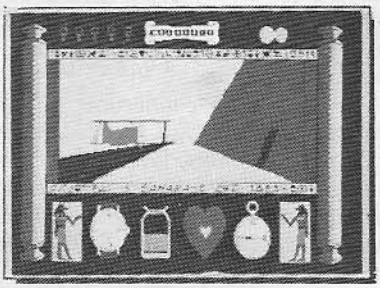
Now that I am here, of course, things are not quite so simple. My water jar is almost empty, my torch battery is fading fast, and I'm lost. They said to draw a map as I went. I tried, but there were just too many doors and too many levels.

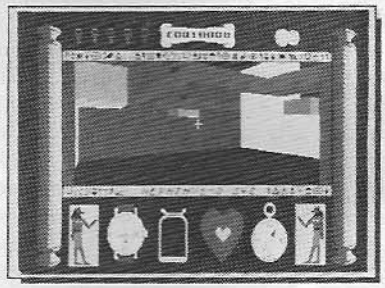
This is *Total Eclipse*, a stunning new game for Amiga and IBM compatible computers. If the elusive sensation of "Being There" counts for anything, then this is one of the best games I have ever played. The fast moving 3D perspective views - dubbed Freescape 3D on the box lid - really work. *Total Eclipse* is more than a game. It's an experience.

As you move your view changes in real time. Quickly. Smoothly. As if you were really there. Naturally, this technique is not new. It has been tried before. But it has never worked like this.

Past attempts have been slow and jerky, full of unrealised potential. Games that you admire for a moment before you play something else. *Total Eclipse* is different. Moments after the title screen has dissolved, you find that you have actually walked inside a pyramid. And there is no turning back.

There are some limitations, of course. You suffer from tunnel vision, with what





can best be described as a Ned Kelly view of your surroundings - all the action takes place in a strip across the upper half of your screen, and you have no peripheral view. To make matters worse, you have the equivalent of a very stiff neck. To look around, you have to actually turn and face the direction you want to see. But these are minor irritations. It's more fun being there in a Ned Kelly helmet with a stiff neck than never having been there at all.

The lower section of your screen displays a beautifully crafted heiroglyphic style control panel. A watch shows elapsed time, a compass shows your heading, an image of the sun shows the progress of the eclipse, and a small red heart pulsates as an indication of your health. Your torch is essential in darkened rooms - an icon toggles it on and off. Don't forget to switch it off when you're not using it. Finally, a glass jar shows your water supply. The level gradually drops as the game progresses, and you will need to find as many reservoirs as you can to replenish it.

The Amiga version of *Total Eclipse* can be controlled by mouse, joystick or keys. A panel of control icons are provided for "mouse mode", though I rarely used them. Generally I found myself using the cursor keys to move about, and the mouse to aim and fire my gun. The system is very flexible - all controls are active, so you can switch between them at any time.

Sound effects are very well done, but unfortunately you have to make a choice, you can either hear what's happening in the game, or play along to a dramatic eight minute sound track - a hackle raising number with an authentic Egyptian flavour and a dramatic sounding pipe organ. A nice touch, and with eight minutes between repeats, it shouldn't prove annoying. ❑

Released by Questor (ph 02 662 7944) on the new MicroStatus label, *Total Eclipse* is a top quality game. At $49.95, it represents very good value - a long term challenge, and a heck of a lot cheaper than a ticket to Egypt.

RRP Amiga $49.95.

Educational software

Fun School 2

Much has been promised, little has been delivered... that's the state of play with Amiga educational software. But things are improving, and we're planning to keep our finger on the pulse. JENNY McDONNELL, an experienced teacher, checks out the FUN SCHOOL 2 series from Pactronics...

REMEMBER THE wide mouthed frog? When I was younger, he was doing support roles in a few corny jokes. Now he's back as the main attraction in what looks like a new career direction. This little fellow is the star of *Fun School 2 For 6-8 Year Olds*, an educational package produced by *Database Educational Software*. As a born comedian and long time entertainer he keeps one jump ahead of anything your little Freddy can dish up in a package of games aimed both at entertaining and educating.

Currently, there are three titles in the *Fun School 2* series - one for the under-six, one for six to eights and one for over eights. Each of the series contains a collection of eight games aimed at improving both your child's computer literacy and basic mathematical and language skills.

Working in schools has taught me that kids love computers. Computers can make even the most boring things seem interesting - and that screen can look so good! Introduce a kid to computers and going back to books seems a bit like riding a pushbike when you've got a Ferrari - good exercise but not half as exciting. Its always good to see more educational software.

Load up *Fun School 2* and you're greeted with a colourful menu featuring the ever present wide mouthed hero. A quick click of the mouse and your child is on the way to some froggy fun. Mostly he or she will be rewarded by colourful graphics and some challenging games. All the games can be increased in difficulty if things are getting a bit dull, and games with word lists can have the lists extended.

To my mind none of the games were brilliant but most were useful. A number of games could be improved with a little more attention to detail. Take *Caterpillar* - a cute version of "hangman". Rather than leaving you with some poor fellow dead, failure to guess the missing word simply means a caterpillar goes hungry. Although this was one of my picks of the pack it could have been better if it gave the player more incentive to continue. After struggling with a problem your efforts are rewarded with the very bland "play again?" being displayed on the screen - not highly motivating. For 6-8 year olds some of the words are pretty tricky - what is an "anorak" anyway?

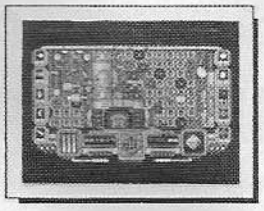
Other games (for example *Bounce*) require skills that are more suited to Eddie Charlton than a junior primary kid.

Games I thought useful were *Number Jump* which dealt with multiplication, and *Treasure Hunt* which basically is a memory game that requires you to use a grid code. *Packing* is a good game for improving mouse skills and recognising shapes, but for an Amiga the graphics are boring.

Similarly *Maths Maze* was a good idea but lacking in excitement. It requires you to guide your froggy friend along a maze of stepping stones. However he is met at intervals by robot guards (what robot guards are doing in a fish pond I'm not sure) who will not let him past until he can answer a mathematical question. Personally I think something dramatic should happen to the robot when the correct answer is given, but instead the whole screen replaces and he just disappears - all very disappointing really.

Even with its shortcomings, *Fun School 2* will still keep your primary aged kids usefully entertained. It has a good range of games which should be helpful to any child. For teachers, the producers have some good ideas for how the software could be used in a classroom situation, and you could probably think up lots more. The only question left is where will the frog go from here?

Review copy supplied by Pactronics (02) 407 0261. RRP $49.95 Amiga and PC.



Feel like a challenge? Custodian was just too hard for Greg Munro. But read on - perhaps you can do better ...

YOU LEARN something new every day. A columbarium is defined in the Oxford dictionary as a "building with niches for reception of cinerary urns." If guard duty in an alien columbarium sounds like your idea of fun, then try *Custodian*, a new game from Hewson.

In *Custodian*, "your job is to protect the ancient warlord's ancient remains from the energy consuming parasites that infest the tomb..." These parasites drain not only the energy level of the tomb, but your own as well, in devastatingly quick time. Their relentless attacks, in waves of four or five at once, make *Custodian* a very difficult game.

Gameplay is via joystick or keys. The humanoid figure you are controlling looks like a two-dimensional cardboard cut-out hunchback, apparently bent double from the weight of the rocket thing on his back. He walks along, or flies using this propellant back pack, over a scrolling background maze of weird plumbing and skull-marked sarcophagi. For an Amiga game, the graphics are quite ordinary.

The scenery and gameplay of *Custodian* reminded me a little of *Obliterator*. In *Obliterator*, Drak must complete his mission before the spaceship explodes. In *Custodian* you must collect all the alien pods and destroy them in "pod annihilation chambers" before the parasites suck the tomb's power dry, which causes it to shut down, killing you in the process. I did not find this a huge problem, however, as most times I did not stay alive long enough to see the tomb's power level drop appreciably anyway!

Your little android Quasimodo has a choice of weapons and must reload with fresh ammunition as he goes. *Custodian* is somewhat more elaborate than *Obliterator* at this point in that you can't just pick up ammo lying around like Drak did. You have to duck into an armoury and buy it, assuming you have enough credits to do so. You may choose from such goodies as Vertical electro bolts, Diagonal multiplasmas, and Megaclear smart bombs. There are ten to choose from, each doing various amounts of damage, and each more effective on different types of attackers.

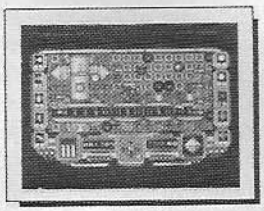
Finding and collecting pods is not easy. Direction indicators tell you roughly where to go to find one, but they only work if you aren't carrying one already. It took me a long time to work out what they looked like, having several times picked one up by accident, only alerted to the fact by the funny electronic noise that running over them produces. Even when you manage to capture a pod, you still need to find your way to an annihilation chamber, through the constant barrage of alien parasites.

Sometimes Teleport chambers help, if you can find one and transport to another nearer the annihilation room. Teleports give you back 256 energy points, which is nice, but cost 100 credits for the ride. You get more credits by killing parasites and collecting pods, and then spend them all replacing the ammunition you've used to earn them. Just like the monthly budget!

Once you get a pod to the annihilation chamber, your task is not over. The pod is released to bounce and sway all over the pitch-black chamber. With the joystick you control a pair of red sights.You must keep the pod within the sights and press the fire button to destroy it. This is extremely difficult! It's about as hard as shooting down a Mig29 in F/A-18 with the cannon. As many times as not, the pod escapes back into the maze before you can destroy it.

I didn't enjoy *Custodian*. It's the kind of game that only a ten year old video parlour whizkid could ever win. If that's you, you might like it, but I prefer a game that is challenging - one that provokes you to try again and gives at least some intimation of achievability. If a game has to be impossible, then it should at least keep you coming back because of the intrinsically fun gameplay and/or interesting graphics. The most interesting thing about *Custodian* was learning that "columbarium" comes from the Latin for "pigeon-house". Which is entirely appropriate - this one is strictly for the birds. ❑

Review copy from Pactronics (02) 407 0261. RRP $49.95 Amiga.



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GOLD RUSH!

Andrew Baartz steps back in time to check out ***Goldrush****, an animated adventure game from Sierra. His findings are mixed ...*

"The Gold Rush is On!" - or at least so the manual says confidently at the beginning. Well, pardner, are youall goan t' come west t' make yer fortchoon? If this is "you" then get ready for Sierra On-Line's Wild West *Gold Rush 3D* Animated adventure. It may be just your cup of tea (or should it be coffee?).

The program opens in Brooklyn Heights, New York in the year 1848. You are Jerrod Wilson, a bit of a milksop, the proverbial 84 pound weakling who works as a clerk. Sure you have ambition, you have gone places in the firm. Maybe in another twenty years you will be an executive, but meanwhile ... back at the ranch. Your brother disappeared years ago, today you receive a letter saying "Come West - Paw has died" - are you going to go?

"What does Jerrod's future hold? Will he continue with the nine to five routine (yawn) of a secure yet somehow unsatisfying career? Or will he break free of his chains and head out west to where the action is? His fate lies in your hands."

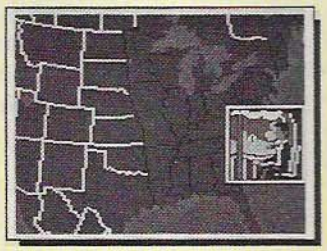
Your goal is to go from Brooklyn to California to find Jake, your brother, and to get rich. In doing so you face puzzles and a race against the clock. This seems to be a good setup for a game. Enough challenge and interest to keep you going, and a big enough picture to challenge you for some time. I am not a country boy at heart, I am a city-slicker born and bred, so in a way it is written for me, but it just doesn't quite get me as an idea.

If that is not enough, the game play lets it down. The graphics are clumsy and no better than an IBM. Things happen slowly - each frame has to be loaded from disk, though if you have enough memory some are saved in a buffer in RAM. Even at their top speed, the action is interminably slow, and if there is another character or two on the screen then you may as well go for a cup of coffee. The sound is also quite inadequate. The Amiga has four sound channels capable of reproducing almost any sound, and they choose to just feed in a simple "compu-note" and have it sound like a C-64 game! Come on guys, you can do better than that!

My rule of thumb is that if I can't get somewhere in fifteen minutes of a game then I give up. Guess what. I persevered with this one, I really did. I tried for an hour and a half and got nowhere much - and that is with a turbo Amiga!

What can I say that is good about it? The documentation is nice! A quite interesting docu-novel on the Gold Rush (in America of course) is included which is a mini-history. The instruction manual is nicely bound in textured cardboard and reasonably clear, with a somewhat helpful 'walk-through' for beginners. The offered backup seems adequate, with hint booklets available and an on-line service if you can afford the phone bills. The disks are of course copy-protected with a manual password. I cannot lie, I do not like copy protection, I wish we could be more honest, and the software houses could release things at a decent price.

Gold Rush does not make good use of the power of a machine like the Amiga. The story is good and engaging, but it is let down by poor program design. This one is only for history loving adventure game freaks. If you're not, don't be in any rush - *Gold Rush* is probably not your style. ❑



Review copy from Ozisoft (02) 313 6444. RRP Amiga $61.95.

DeluxePaint III Tips
from Owen Webster

- Two clicks on the custom brush tool will allow you to define a brush as a polygon.
- The ESC key will exit you from text mode and into draw mode.
- The cursor keys will move the picture away form the menu strip and toolbox.
- Choose a screen format with no more colours than you really need. This conserves memory and saved files are smaller.
- Free the stencils rather than switching them on and off to conserve memory.
- You can create the illusion of extra colours in medium res mode by interweaving single pixel columns of related colour.
- Experiment with the tools while holding the CTRL key down for some great effects.
- Mirroring will not work outside of a magnified area of screen.
- Be careful when using the spare screen, it is easy to save one picture with the title of the other. If this happens check the "Backup.pic" file, all may not be lost.
- If things start to act strangely, you could be headed for a GURU. So save immediately.

Disk Validator problems
by Andrew Dunstall

- Recently I came across a way of restoring a disk that had trashed its Disk-Validator (thus rendering the disk useless). This was a godsend to me as this type of disk corruption occurs somewhat frequently. The following remedy may, or may not, be common knowledge. Hopefully it will help someone with a box full of un-Validated disks.

If disk corruption occurs, a requester box will appear asking for volume 1 to be inserted. The 1 directory contains, among other things, a file called Disk-Validator. After clicking on the cancel gadget two more requesters appear saying the disk has been corrupted and use DiskDoctor to restore it. From this point I warm-booted and went into the Workbench

CLI and created a directory in RAM containing various AmigaDOS commands. (Those of us with one disk drive probably already have their own custom RAMdisk for shunting information from disk to disk). Next I assigned DF0:C to RAM:C (so the corrupt disk could be worked on). I then inserted the corrupt disk and typed the following:

```
makedir ram:l
copy df0:l/Disk-validator ram:l
assign l: ram:l
```

This procedure is similar to assigning your disk's C directory to RAM. Thus the Amiga, instead of looking for the Disk-Validator on the disk, picks it up from RAM. Problem solved. Now you can copy the RAM:l (containing Disk Validator) directory to your corrupt disk and it should function normally. The RAM:C directory I mentioned earlier needs only to contain a few commands: ASSIGN : MAKEDIR : COPY and perhaps Dir to see how things look. ❑

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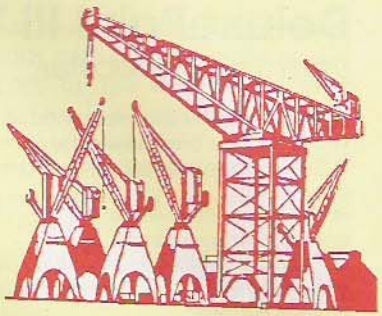
Adventurer's Realm

by Michael Spiteri



G'Day, welcome to the Realm - Australia's only adventure section.

If you have any adventure problems, maybe one of the Realm's hint sheets will help you out. Otherwise, I have solutions to many other games, and if nobody here can help you then I'll print your problem and maybe some other adventurer can put you back on the road. I collect hints and tips for all games, so send them in if you have some to spare. The address to write to is:

Adventurers' Realm
1/10 Rhoden Court
North Dandenong
Victoria 3175

If wargames are down your avenue, resident wargaming expert Barry Bolitho will answer your queries, so write to the above address, marked "Wargame Section".

Finally, don't forget Kamikaze Andy is waiting in his Dungeon to help with all your role-playing queries. His address is:

Realm's Dungeon
44 Hawkesbury Drive
Willeton
WA 6155

Free hint sheets

● The following hint sheets are available free of charge!! Just enclose a stamped addressed envelope. The Realm has given away over 10,000 hint sheets over the last two years, which means certain hint sheets frequently run dry. Therefore a maximum of four hint sheets per person will be available. Choose from the following:

- Bards Tale 1,2,3
- Zork 1,2,3
- Hitchhiker's Guide
- Hampstead
- Hobbit
- Castle of Terror
- NeverEndingStory 1
- AdventureLand
- Borrowed Time
- Faery Tale
- The Pawn
- Pirate Adventure
- Deja Vu
- Dracula 1,2,3

Game of the month

Sleeping Gods Lie

For the Commodore Amiga.

● With such a dramatic title, you'd expect a dramatic game! Well, I'm not sure if I would use that exact word to describe the game - but most certainly the plot!

How would you react if all of a sudden a little old man dropped dead on your doorstep with a piece of metal in his hand that has the power to raise a powerful sleeping god? I suppose the chances of that happening these days would be quite rare, and would probably be an advertising gimmick for some new vitamin tablet.

However, if the name of the so-called god was N'Gnir, and you were currently living in a land where goblins and hobbits roam, trying to survive under the powerful but vicious rule of the evil Archmage and his henchman, then you might just ponder a little longer about what lies before you.

That's where the game begins, with you walking around your home, deciding whether to search for N'Gnir and wake him with this little metal gadget. A step out of your door takes you into a very violent wilderness where horrible little tackers are throwing things at you. Well, you won't stand for that so you conspicuously start throwing those pebbles which you found on your living room floor at the painful creatures. By stepping outside your door, you have decided to take up the quest for N'Gnir, a quest that will take you through eight kingdoms! (A total of 94 locations).

Everything is displayed graphically on a scrolling 3D landscape, more like *Mercenary* rather than *Bards Tale*. You move around using either mouse, keyboard, or joystick (or even all together!).

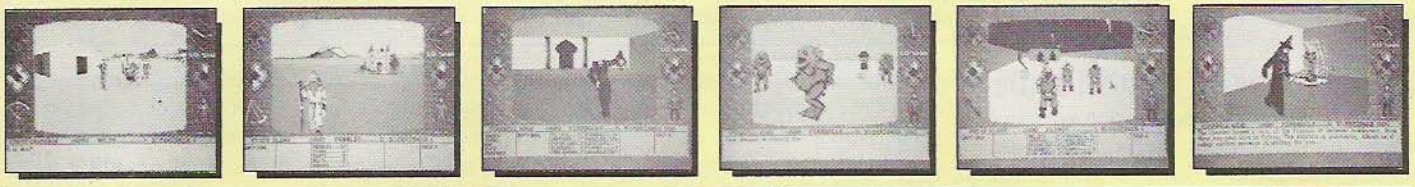
You pick up objects and weapons by moving over them, and switch between things you are carrying using the function keys. All the characters you meet are displayed in full colour and animation, and actually take up a good part of the screen! Graphics are very good, very smooth, and very convincing.

The makers describe the game as a combination of strategy, adventure and action. It certainly contains elements of adventure games - the occasional text description, the numerous locations, the various problems set upon you. Then it has role-playing elements such as strength and magic factors. It most certainly has action - everywhere. In fact, the arcade element seems to control most of the game as you try to literally battle your way through all the kingdoms. A good joystick is a must.

Sleeping Gods Lie is a very fast moving game with great sound and graphics. It is a game that tries to bridge the ever closing gap between adventure and arcade style games, and almost succeeds. Role-playing gamers will like it more than adventurers, although it does provide a form of escape from the run-of-the-mill brain stalking adventures, and I'd rather see adventurers running to *Sleeping Gods Lie* than *Space Ranger*.

Excellent packaging and documentation, great graphics, good playability earns it an A plus in the Realm. If you are looking for something different but still perplexing and challenging, then take a look at *Sleeping Gods Lie*.

By Empire Software
Distributed by Questor (02) 662 7944
RRP Amiga $69.95



The Dungeon
by Kamikaze Andy

Dungeonmaster

● Undoubtedly one of the best RPG's ever released, *Dungeonmaster* from FTL Products has tortured and delighted many role-players worldwide with its excellent graphics, superb sound effects, but most of all, its totally absorbing gameplay. The Amiga version requires a minimum of 1 meg.

The plot itself is fairly simple - explore a 14 level dungeon with a group of up to four characters, with the final goal of retrieving a magic staff and using the staff to defeat the evil load of chaos. Along the way you will be confronted by many fiendish puzzles, and of course, the usual bunch of unemployed trolls.

Presentation is in 3d perspective, similar to the graphics window found in the *Bard's Tale* series. Your character's statistics will be displayed across the top of the screen, and input is via keyboard or mouse.

Much has been said about the graphics of *Dungeonmaster*, and it isn't hard to see why. The walls that surround you are highly detailed, and the monsters which attack you are truly spectacular. Large rats come to life with breathtaking animation, and when you finally confront the red dragon, be prepared to be amazed!

Sound effects are excellent, but unfortunately, these are limited in number.

Dungeonmaster incorporates a new system of magic and spellcasting by using symbols instead of words to cast spells. Spells are cast when the correct symbols are joined together from a list of symbols, all having different effects when mixed differently.

Dungeonmaster has spawned numerous clones, sequels and additional data disks. *Dungeonmaster II* is apparently set in outer space, which just goes to show that *Dungeonmaster* is destined to be a classic of our time.

Distributed by OziSoft (02) 313 6444
RRP Amiga $61.95

Problems, Problems, and more Problems

● In the dark and dank shadows of the Realm lies many an adventurer, usually with little hair (the result of constant hair pulling). Among them are Zorkers, Barders, Helmers, Hitchhikers. Children and adults and the aged. However, still there is hope for their survival of sanity - you! Yes, you expert and experienced adventurers can help these wallowing degenerates...

Adam Pride of Elanora Heights in NSW is in tears after being unable to get back from the Plain of Light in *Phantasie III*. Help needed!!!

Then we have Tracey Logan of Marsden in Qld. *Rigel's Revenge* is causing tremendous parmucles. Lost in a desert, stuck before a tank, and facing difficulties entering a house just to name a few of Tracey's problems.

A. Stivala has stopped laughing and is now leaning over the edge of sanity in *Red Moon*. He cannot seem to open the safe in the treasure vault!

Noel McAskill cannot kill the witch in *Jinxter*. Any takers?

P.J.Diddams is stuck in *Times of Lore*. Problems trying to destroy the evil Lyche!!

Ken Eustace of WA is stuck in *Lucifers Realm*. He wants to know how to get past Adolf Eichmann, and also how does he stop John Booth shooting him in the head (painful!). Then, in *African Safari*, how do you get the snake off the paddle?

Arazok's Tomb is troubling Tony Lundberg. He want to know how to avoid getting killed by the Terians, and how to get past Zud when he appears the second time around. Also, what are the wand and the prism used for?

James Turner is having great problems getting through the gate is the ageing *Bastow Manor*. I expect heaps of responses for this problem.

Bastow Manor is also troubling L. Aylmer of Bundaberg in Qld. He/she has got into the house but cannot seem to make much progress.

Finally, Gavin Jackson is stuck in *Golden Path*. He wants to know how to get the stick of yellow incense. Also, how do you get to the golden tomb? ❑

Help, Help and more Help

● Thanks to all who supplied hints and tips for those who need it and those who don't. Yes, folks, you've guessed it, everyone's favourite part of the Realm, where all the juicy hints come out and the wallowing peasants are put out of their misery.

Tips for *Red Moon* (Supplied by C.Holmes of Burringbar, NSW)

● Wear the gloves to get the sword.

● East the mushroom to enter the secret cupboard.

● Wear the linen shirt to wear chain mail.

● Put pills in meat and give to dog.

● Obis open sarcophagus.

● Rubber boots to enter metal room.

Tips for *Arazok's Tomb* (Supplied by Tony Lundberg, Kempsey NSW)

● To get past Zud you just simply use the sword, which you should have found in one of the rooms in the Twin City.

Tips for *Space Quest II* (For Severian, supplied by Running Man)

● To get past the hunter you will need to get a spore from the bottom of the mailbox screen and throw it at him.

● To get past the monster in the cave you will need the gem. Hold it in your hand and he won't come near you.

● To get past the whirling monster, throw him the puzzle!

Tip for *Lords of Time* (For Maree Reynolds, from A Stivala, Spence ACT)

● You do not need to take the Porsche, and as far as I know, you can't do it anyway. What you should do, however, is to examine it to find the petrol, which is useful when you find the way ahead blocked by the wooly mammoth! ❑

Adventurer of the Month

● No doubt many will agree with me for making Dorothy Millard of Croydon, Victoria, Adventurer of the Month for supplying all the following adventurers with a doorway to hope....

For: Dot the Granny

Game: *Quest for the Golden Eggcup*

Help: After you have sat on the seat and find yourself in another room, examine straw to find a credit card then show card to man and he will ferry you across.

Game: *The Help*

Help: To get past the Griffin, insert dart in the reed to make a blowpipe which penetrates his thick skin (MS: Nasty!!) and turns him to stone (MS: Even nastier!). To get into the castle, pick lock with the needle. The stones become stepping stones to cross the river. The mirror is used later in the game to deflect the shimmering light.

Game: *Imagination*

Help: To get past the dogs, change the wind direction by giving the map to the woman at the top of the tower. To deal with the bull you must fire the gun in theWW2 bomber.

For: Ron McCorkill

Game: *Colossal Caves*

Help: The pirates' treasure is in the maze alongside any items stolen from you.

From west end of hall of mists go s.e.s.s.s.n.e. to the brink of pit then e.nw to a dead end and there should be a chest.

For: Mr. J. Serrio

Game: *Rigels Revenge*

Help: To get into the tank, wear the Rigel uniform then go up.

For: David Couche

Game: *Thermonuclearwargames*

Help: In the War Room you must sit at the terminal, insert the podule then push button and you will be asked for an access code which is 340COL009MAG.

For: David Lear

Game: *Subsunk*

Help: To open the safe wear the stethoscope, turn left twice then right.

Game: *Kayleth*

Help: To get the seeds you must first plant the bulb in the compost to grow then wait about twelve times until the Tea flower bursts open. At the southerly corridor you must fire plasma at the bricked up wall.

Game: *NeverEnding Story*

Help: To get the key out of the room full of rats you must enter N AND GET KEY.

For: Maree Reynolds

Game: *King Solomons Mines*

Help: Keep the red herring until you reach the second anthill, then drop fish.

Thanks Dorothy, and everyone else who helped!! That's all until next month in Adventurer's Realm. ❑

Adventures for sale:
The Pawn, Jinxter, Deja Vu, Lancelot, Lord of the Rings I & II, Bards Tale I.
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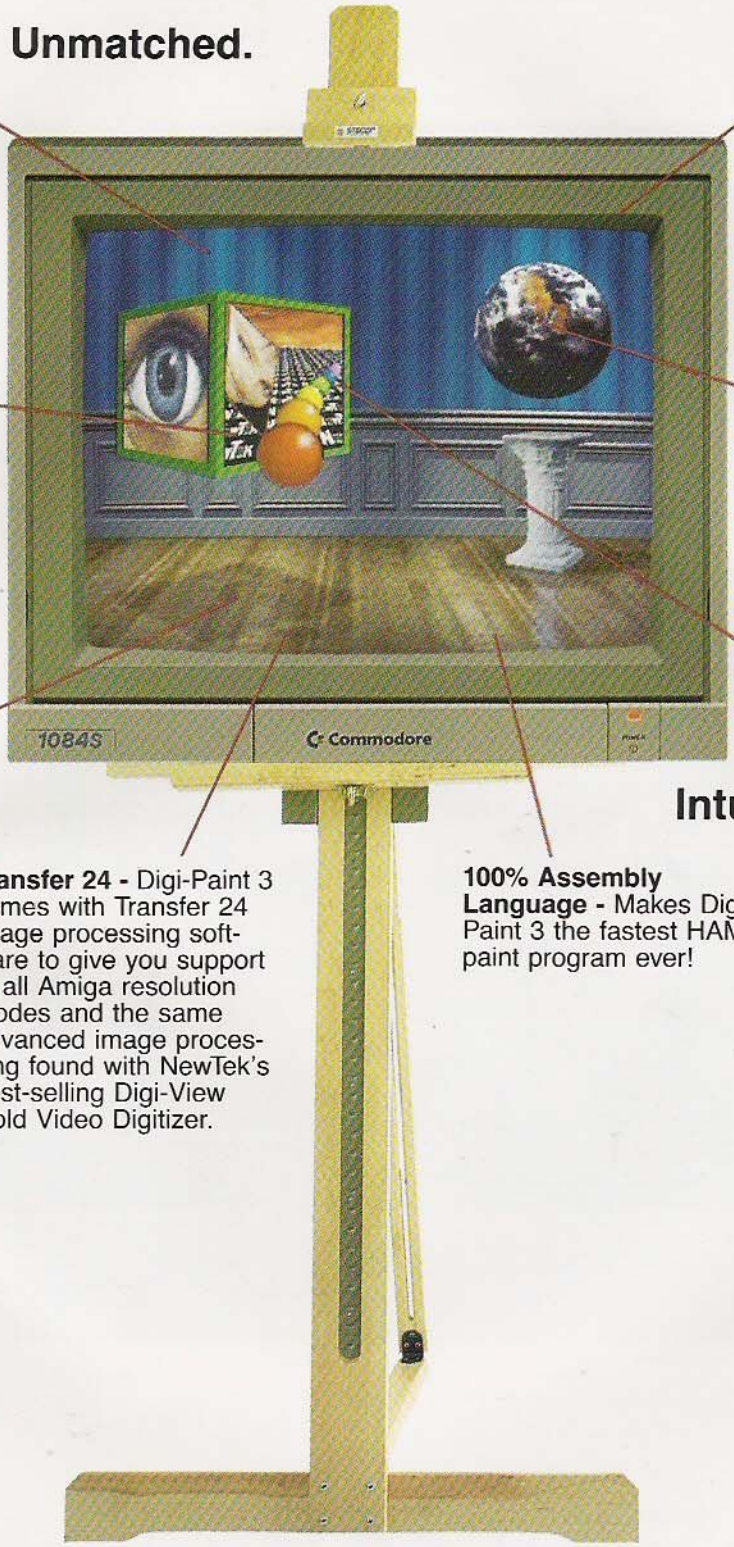

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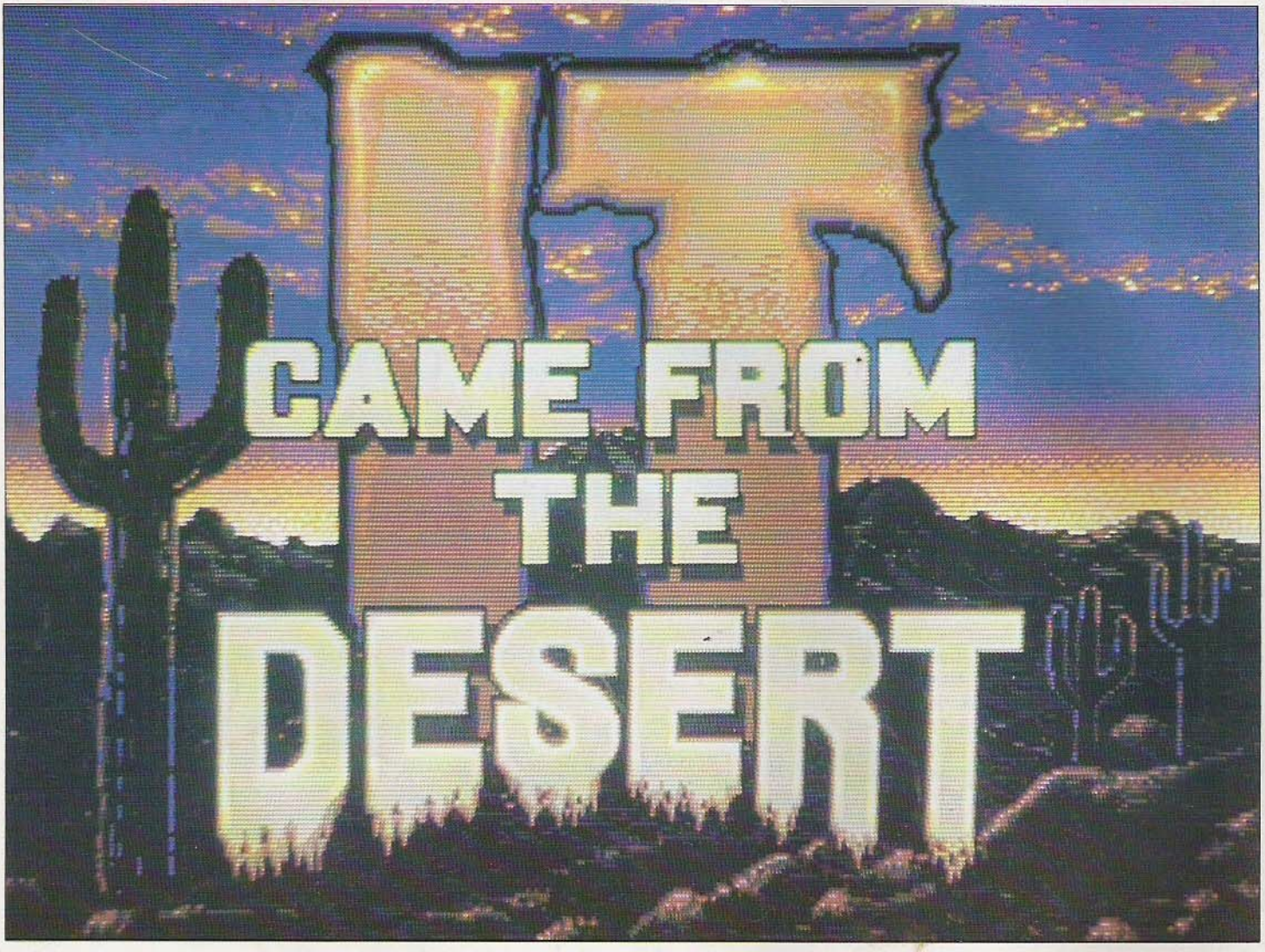

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